COMPACT AUDIO

A-311/X-311/X-311L

SERVICE MANUAL

KENWOOD

3421

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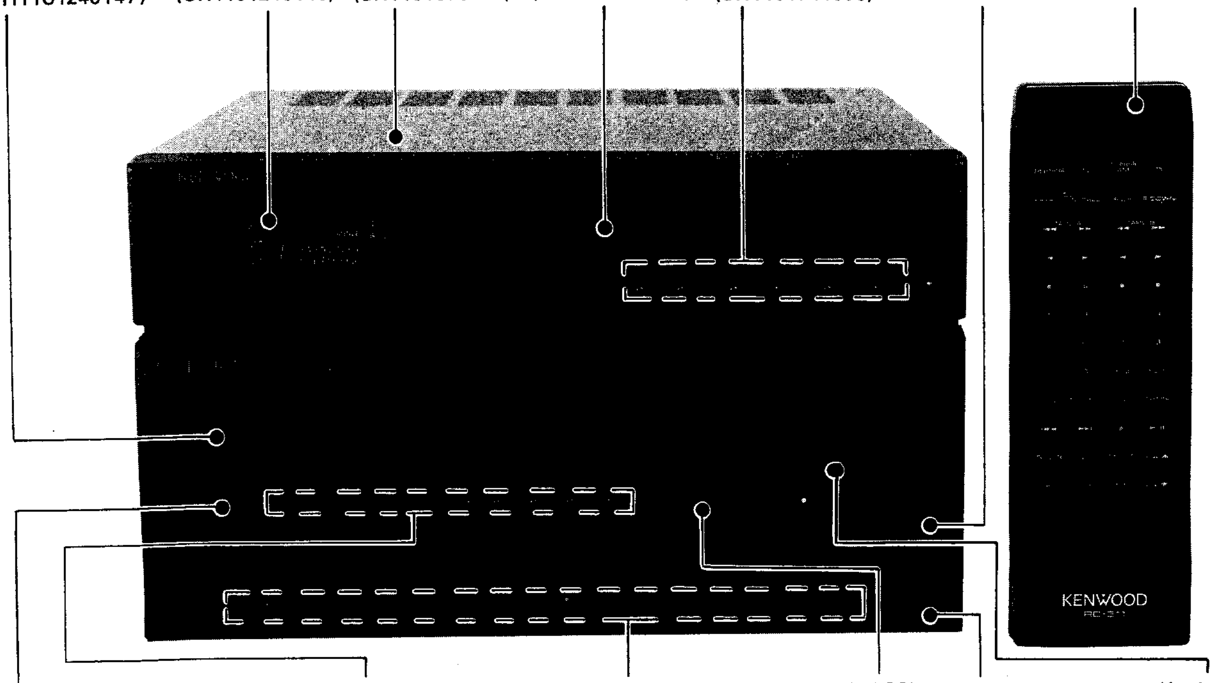
B51-4180-00 (O) 2994



GE window (SH1101240147)

CD indicator (SH1101240146)

Cabinet (A-311) (SH1101070166)

Tray panel (SH1101580615)

Knob (CD function) (SH1101741096)

Knob (BALANCE) (SH1101741087)

Remote controller* (A70-)

Remote controller filter (SH1101240152)

Knob (MEMORY/FLT/EFFECT/REF) (SH1101741095)

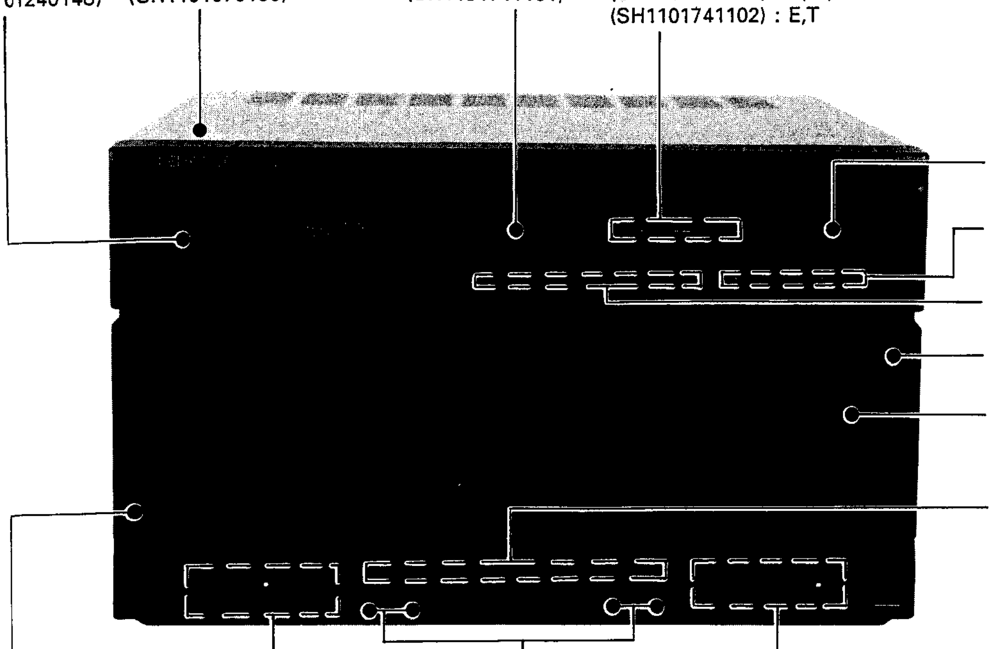
LED with top (A) (SH1101540972)

Knob (BASS) (SH1101741086)

Headphone jack (SH1305170468)

Knob (VOLUME) (SH1101741085)

Photo is A-311.



Tuner window (SH1101240148)

Cabinet (X-311) (SH1101070166)

Knob (TUNNING) (SH1101741101)

Knob (BAND)
(SH1101741142) : K,M,X
(SH1101741102) : E,T

Knob (PRESET) (SH1101741103)

Knob (MODE) (SH1101741141)

Knob (TIMER) (SH1101741104)

T1 cassette cover (SH1101100447)

Cassette window (SH1101240145)

Knob (7 KEYS) (SH1101741099)

T2 cassette cover (SH1101100448)

T2 cassette knob
(SH1101741144) : M,X
(SH1101741150) : K,E,T

Knob (FF REW) (SH1101741100)

T1 cassette knob
(SH1101741143) : M,X
(SH1101741149) : K,E,T

Photo is X-311L.

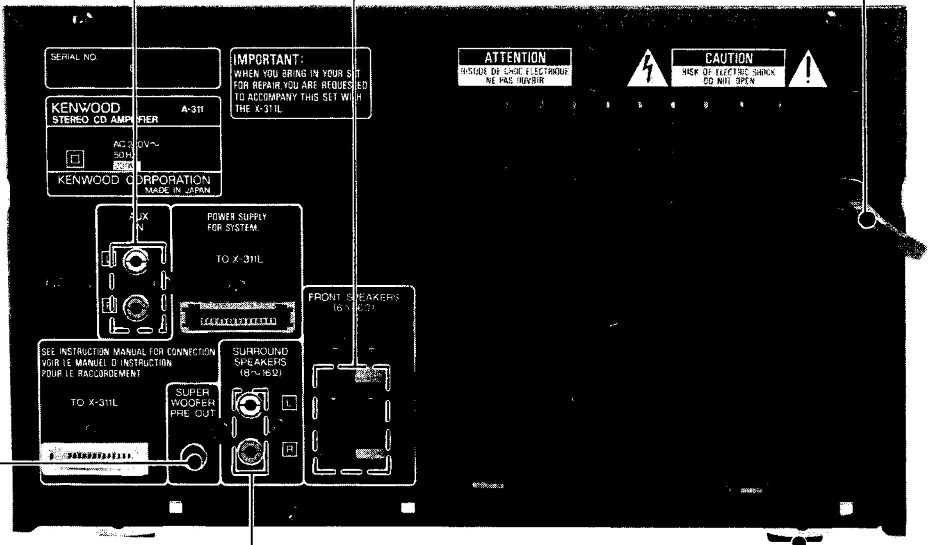
3421

EXTERNAL VIEW

Phono jack (AUX)
(SH1105270076)

Speaker terminal
(SH1165320073)

AC cord
(SH1105000040) : T,E
(SH1105000041) : M,X
(SH1125000036) : K


SERIAL NO.
IMPORTANT:
WHEN YOU BRING IN YOUR SET FOR REPAIR,YOU ARE REQUESTED TO ACCOMPANY THIS SET WITH THE X-311L
KENWOOD
STEREO CD AMPLIFIER
A-311
KENWOOD CORPORATION
MADE IN JAPAN
ATTENTION
CAUTION
AUX IN
POWER SUPPLY FOR SYSTEM.
TO X-311L
FRONT SPEAKERS
SEE INSTRUCTION MANUAL FOR CONNECTION
VOIR LE MANUEL D' INSTRUCTION POUR LE RACCORDEMENT
TO X-311L
SUPER WOOFER PRE OUT
SURROUND SPEAKERS (8~16Ω)

Phono jack (SUPER WOOFER)
(SH1105270108)

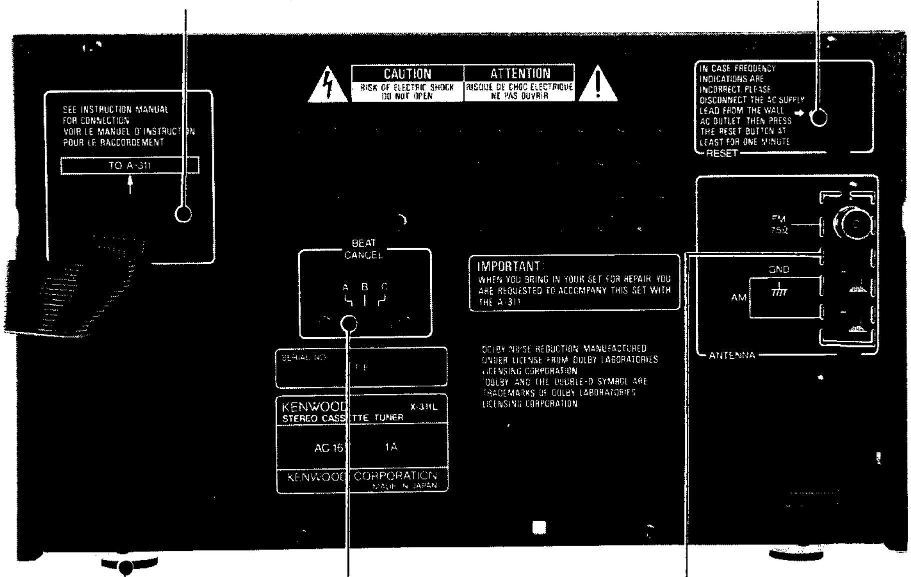
Phono jack (SURROUND)
(SH1105270109)

Foot (BACK)
(SH1163400025)

Photo is A-311.

Stopper
(SH1102040087)

Switch (RESET)
(SH1305300614)


CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN
ATTENTION
RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR
SEE INSTRUCTION MANUAL FOR CONNECTION
VOIR LE MANUEL D' INSTRUCTION POUR LE RACCORDEMENT
TO A-311
IN CASE FREQUENCY INDICATIONS ARE INCORRECT, PLEASE DISCONNECT THE AC SUPPLY LEAD FROM THE WALL AC OUTLET THEN PRESS THE RESET BUTTON AT LEAST FOR ONE MINUTE
RESET
BEAT CANCEL
A B C
IMPORTANT:
WHEN YOU BRING IN YOUR SET FOR REPAIR,YOU ARE REQUESTED TO ACCOMPANY THIS SET WITH THE A-311
FM 75Ω
GND
AM
ANTENNA
SERIAL NO.
KENWOOD
STEREO CASSETTE TUNER
X-311L
AC 1A
KENWOOD CORPORATION
MADE IN JAPAN

Foot (BACK FELT)
(SH1163400025)

Switch
(SH1105300403)

Antenna terminal
(SH1205320027) : E,T
(SH1125320066) : K,M,X

Photo is X-311L.

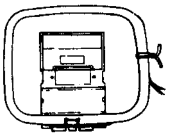
CONTENTS/ACCESSORIES/CAUTIONS

Contents

ACCESSORIES 3
CAUTION 3
CONTROLS 4
DISASSEMBLY FOR REPAIR
  A-311 .... 6, 8
  X-311 10
BLOCK DIAGRAM
  A-311 .... 11, 12, 13, 14
  X-311 .... 15, 16
ADJUSTMENT 17
PC BOARD (COMPONENT SIDE VIEW)
  A-311 .... 21, 22, 31, 32, 33, 34
  X-311 .... 43, 44, 45, 46, 55, 56
SCHEMATIC DIAGRAM
  A-311
  ....23, 24, 25, 26, 27, 28, 29, 30, 35, 36, 37, 38
  X-311
  39, 40, 41, 42, 47, 48, 49, 50, 51, 52, 53, 54 57, 58
EXPLODED VIEW (MECHANISM)
  A-311 59
  X-311 60
EXPLODED VIEW (UNIT)
  A-311 61
  X-311 62
PARTS LIST 63
SPECIFICATIONS .... BACK COVER

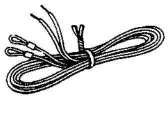
Accessories

- AM loop antenna ... 1



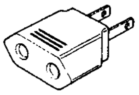
(SH1105020013)

- FM indoor antenna ... 1



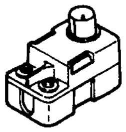
(SH1125040004)

- AC plug adaptor ... 1
(Except for some areas)



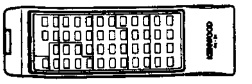
(E03-0115-05) M

- Antenna adaptor ... 1
(75 Ω/300 Ω)
(Except for some areas)



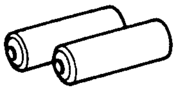
(T90-0136-05) E,T

- Remote control unit ... 1



(A70-0526-08) K,M,X
(A70-0527-08) E,T

- Batteries (R06/AA) ... 2



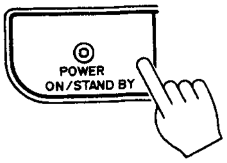
(–)

Caution

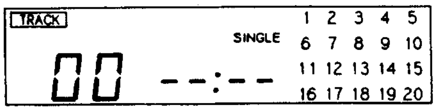
• Caution after transport or carriage of the CD player

When the CD player was transported or carrier to another place, please perform the following operation to check it.

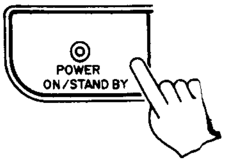
① **Turn the power ON without putting a disc in the unit.**



② **Wait several seconds, and check that the display of CD player shown below appears.**



③ **Turn the power OFF.**

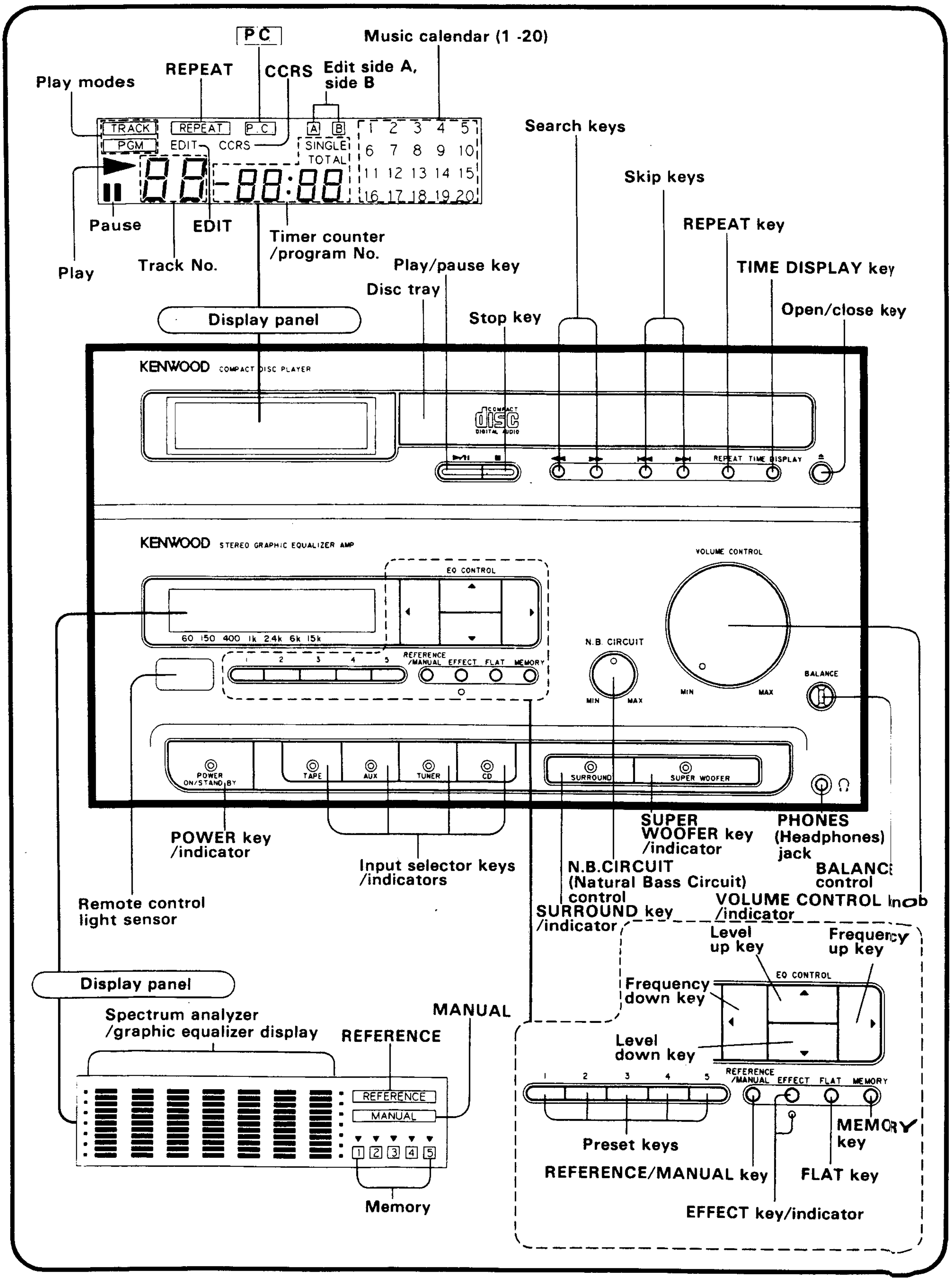


• Caution of repair

1. Write mark on cable and connector, before pulling out cable.
2. If you want to power on A-311 without X-311/ X-311L, short-circuit TP201.
3. If you want to power on X-311/X-311L without A-311, need power supply jig (RM-90PS). Power-on procedure is written on page 17.

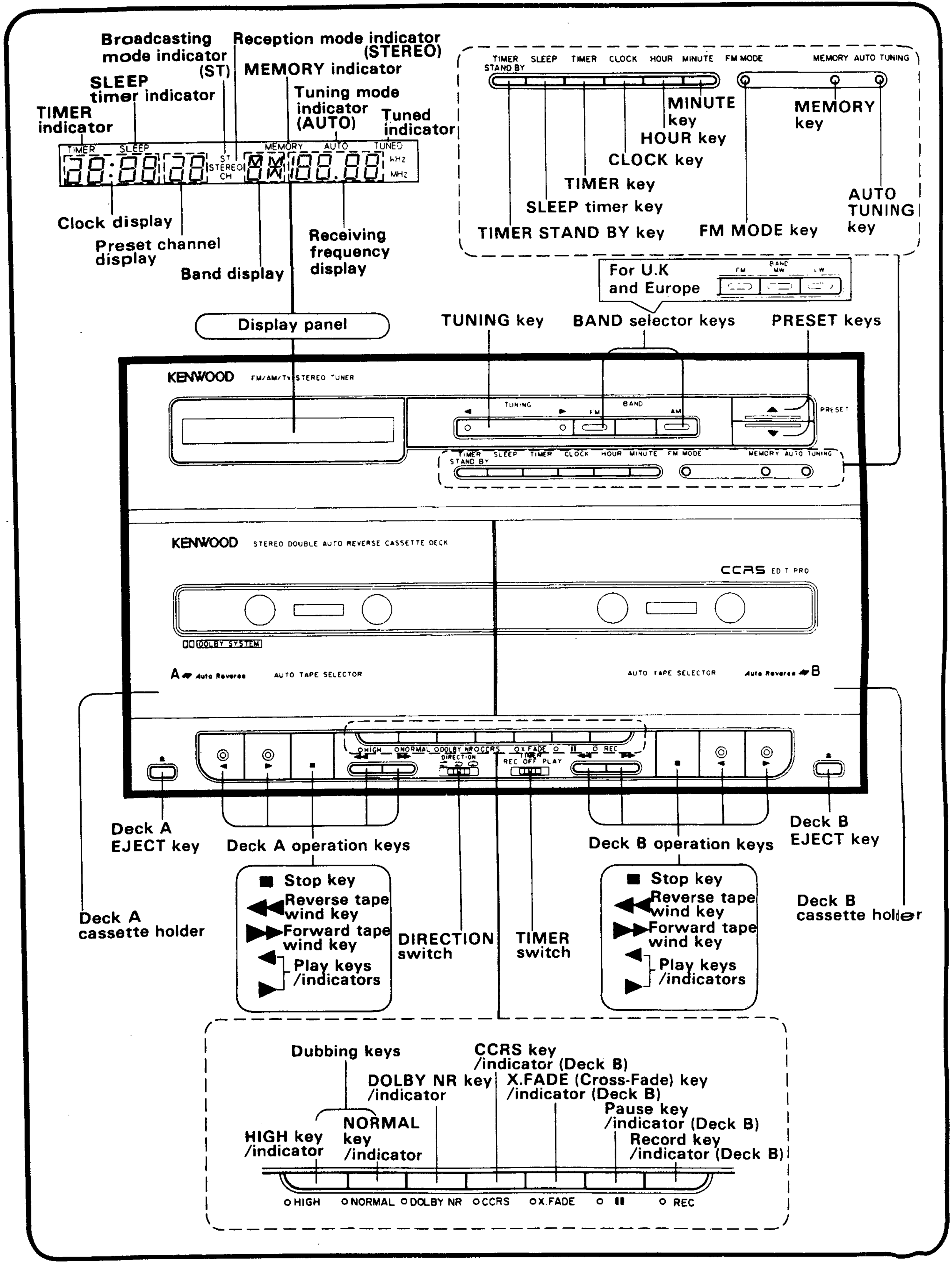
CONTROLS

CD player / amplifier unit


P.C
Music calendar (1 -20)
Play modes
REPEAT
CCRS
Edit side A, side B
TRACK
REPEAT
P.C
A
B
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
PGM
EDIT
CCRS
SINGLE
TOTAL
Pause
EDIT
Timer counter /program No.
Play
Track No.
Search keys
Skip keys
REPEAT key
TIME DISPLAY key
Play/pause key
Disc tray
Stop key
Open/close key
Display panel
KENWOOD COMPACT DISC PLAYER
COMPACT DISC DIGITAL AUDIO
REPEAT TIME DISPLAY
KENWOOD STEREO GRAPHIC EQUALIZER AMP
VOLUME CONTROL
EQ CONTROL
60 150 400 1k 2.4k 6k 15k
1 2 3 4 5
REFERENCE /MANUAL EFFECT FLAT MEMORY
N.B. CIRCUIT
MIN MAX
MIN MAX
BALANCE
POWER ON/STANDBY
TAPE
AUX
TUNER
CD
SURROUND
SUPER WOOFER
POWER key /indicator
Input selector keys /indicators
SUPER WOOFER key /indicator
PHONES (Headphones) jack
BALANC control
N.B.CIRCUIT (Natural Bass Circuit) control
VOLUME CONTROL knob
Remote control light sensor
SURROUND key /indicator
Level up key
Frequency up key
Frequency down key
EQ CONTROL
Level down key
Display panel
Spectrum analyzer /graphic equalizer display
MANUAL
REFERENCE
REFERENCE
MANUAL
1 2 3 4 5
Memory
1 2 3 4 5
REFERENCE /MANUAL EFFECT FLAT MEMORY
Preset keys
MEMORY key
REFERENCE/MANUAL key
FLAT key
EFFECT key/indicator

CONTROLS

Tuner / cassette deck unit


Broadcasting mode indicator (ST)
Reception mode indicator (STEREO)
MEMORY indicator
SLEEP timer indicator
TIMER indicator
Tuning mode indicator (AUTO)
Tuned indicator
TIMER
SLEEP
ST
STEREO
CH
MEMORY
AUTO
TUNED
kHz
MHz
Clock display
Preset channel display
Band display
Receiving frequency display
Display panel
TIMER STAND BY
SLEEP
TIMER
CLOCK
HOUR
MINUTE
FM MODE
MEMORY
AUTO TUNING
MINUTE key
HOUR key
CLOCK key
TIMER key
SLEEP timer key
TIMER STAND BY key
MEMORY key
FM MODE key
AUTO TUNING key
For U.K and Europe
BAND
FM
MW
LW
TUNING key
BAND selector keys
PRESET keys
KENWOOD
FM/AM/TV STEREO TUNER
TUNING
BAND
FM
AM
PRESET
KENWOOD
STEREO DOUBLE AUTO REVERSE CASSETTE DECK
CCRS ED T PRO
DOLBY SYSTEM
A Auto Reverse
AUTO TAPE SELECTOR
AUTO TAPE SELECTOR
Auto Reverse B
DIRECTION
TIMER
REC OFF PLAY
Deck A EJECT key
Deck A operation keys
Deck B operation keys
Deck B EJECT key
Deck A cassette holder
Deck B cassette holder
■ Stop key
◀◀ Reverse tape wind key
▶▶ Forward tape wind key
◀ ▶ Play keys /indicators
DIRECTION switch
TIMER switch
■ Stop key
◀◀ Reverse tape wind key
▶▶ Forward tape wind key
◀ ▶ Play keys /indicators
Dubbing keys
CCRS key /indicator (Deck B)
DOLBY NR key /indicator
X.FADE (Cross-Fade) key /indicator (Deck B)
Pause key /indicator (Deck B)
Record key /indicator (Deck B)
NORMAL key /indicator
HIGH key /indicator
○ HIGH
○ NORMAL
○ DOLBY NR
○ CCRS
○ X.FADE
○ ❚❚
○ REC

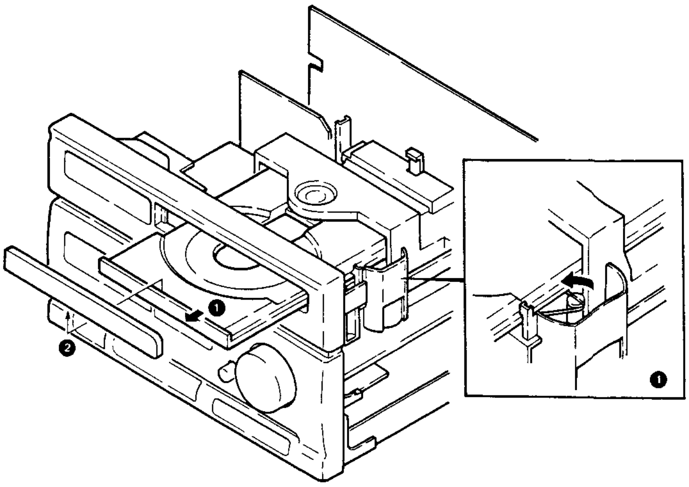
DISASSEMBLY FOR REPAIR

UD3 DISASSEMBLY FOR REPAIR

1. A-311 DISASSEMBLY

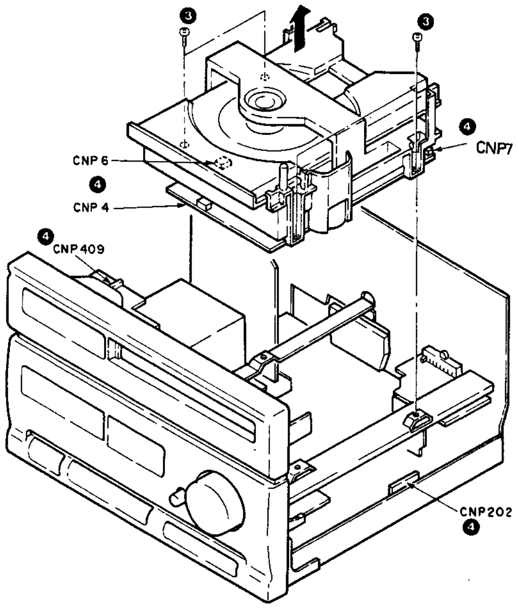
1-1. Turn pulley of mechanism counterclockwise and tray comes out (❶).

1-2. Remove tray panel (❷).



1-3. Remove 4 screws (❸).

1-4. Pull out 5 connectors (❹) and remove mecanism ass'y.



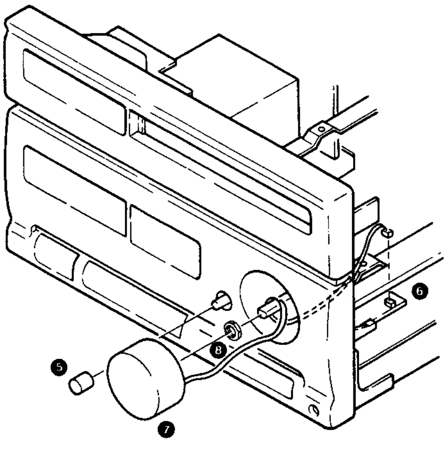
1-5. Remove knob of BASS CONTROL (❺).

1-6. Pull out connector (❻).

1-7. Remove VOLUME knob (❼).

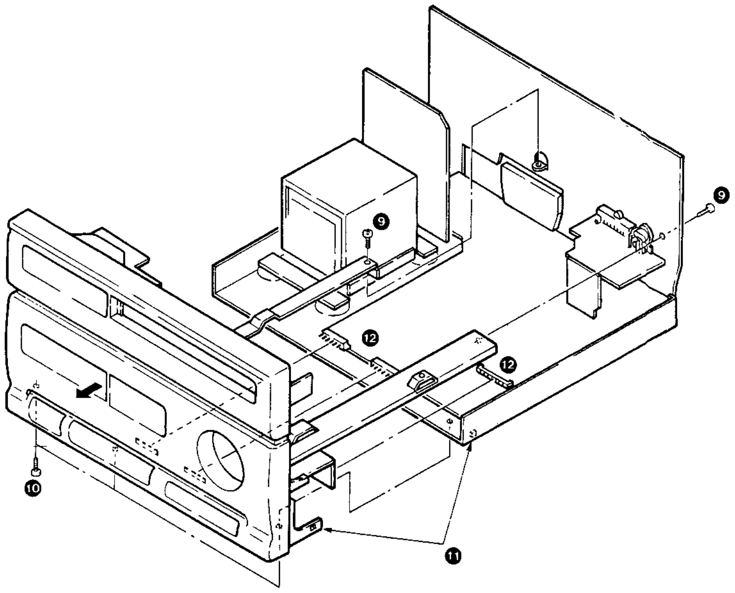
1-8. Remove nut (❽).

NOTE: If reinstall VOLUME knob, wind LED leads around shaft of VOLUME potentiometer.

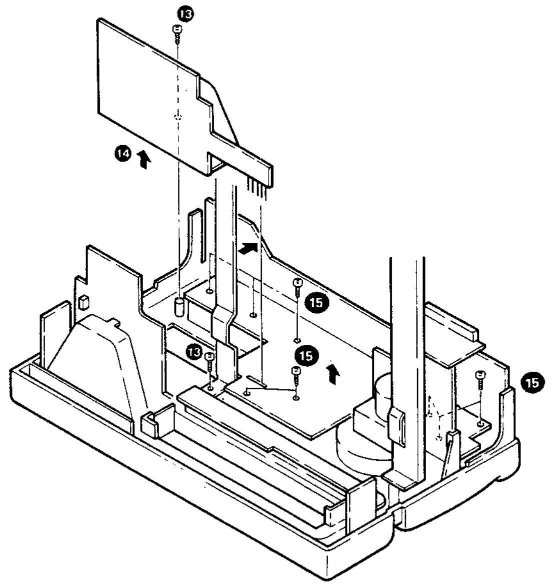


DISASSEMBLY FOR REPAIR

1-9. Remove 2 screws (❾).
1-10. Remove 3 screws (❿).
1-11. Undo both catches of front panel (⓫).
1-12. Pull out front panel ass'y frontwards with care of connectors (⓬).



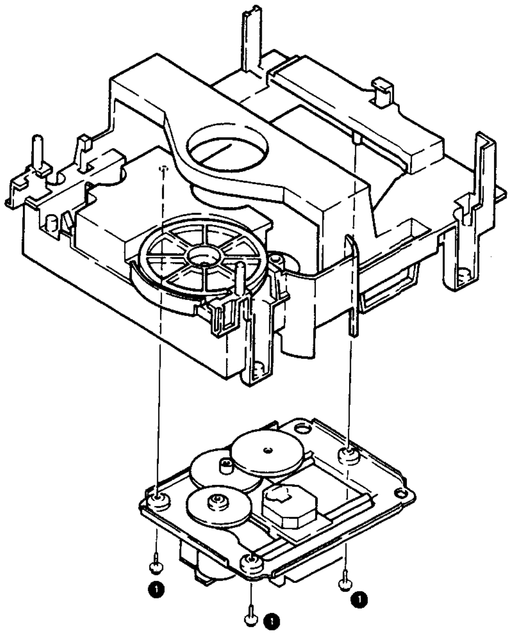
1-13. Remove 2 screws (⓭).
1-14. Slide hardwares to arrows (⓮) and remove Display pcb
1-15. Remove 4 screws (⓯) and pcb.



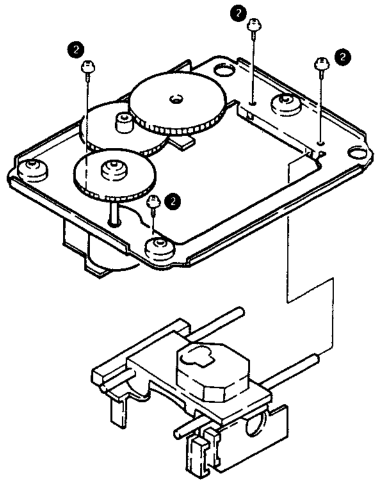
DISASSEMBLY FOR REPAIR

2. A-311 DISASSEMBLY

2-1. Remove 3 screws (❶) and remove pickup chassis ass'y.

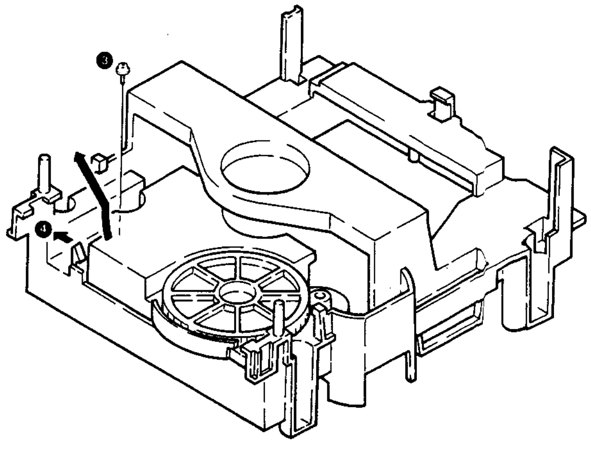


2-2. Remove 4 screws (❷) and remove pickup.



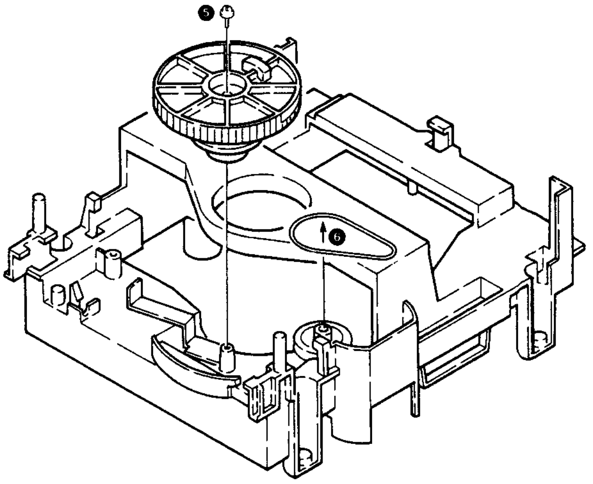
2-3. Remove screw (❸).

2-4. Undo catch and remove shift lever to arrows (❹).



DISASSEMBLY FOR REPAIR

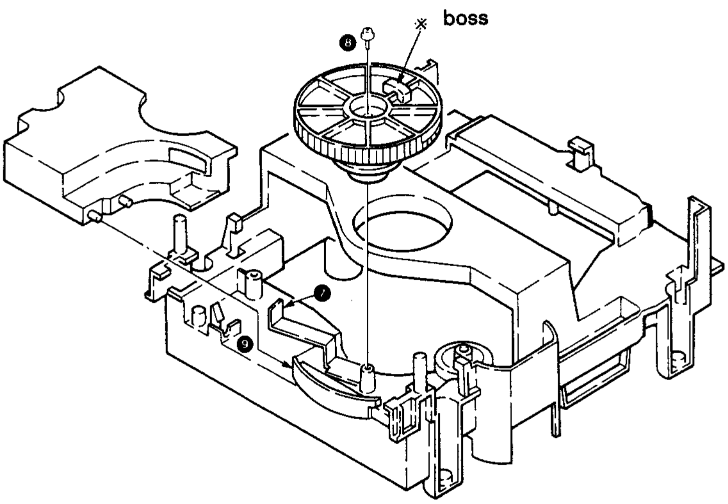
2-5. Remove screw (❺) and remove gear.
2-6. Remove belt (❻). When installing gear, use the following procedure.



2-7. Fix plate to position of front (❼).
2-8. Set gear and fix it with screw (❽).

NOTE: Position of Gear's boss is very important. please set boss backward.

2-9. Set projection of shift lever to hole of chassis (❾).



DISASSEMBLY FOR REPAIR

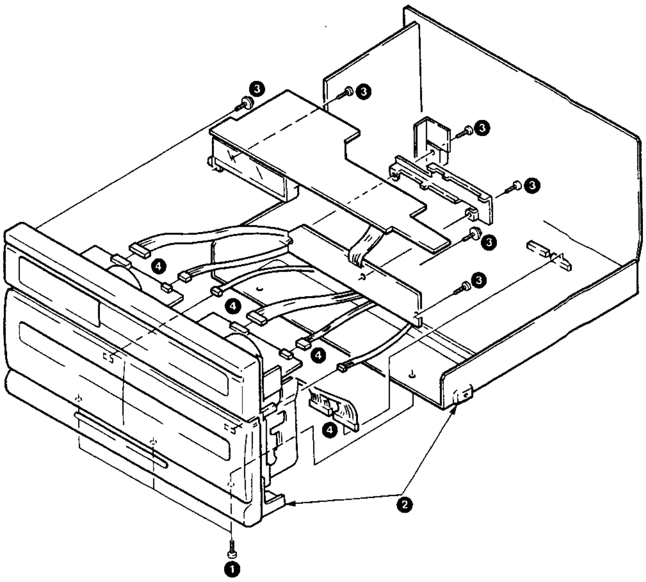
3. X-311 DISASSEMBLY

3-1. Remove 3 screws (❶).

3-2. Undo both catches of front panel and remove panel (❷).

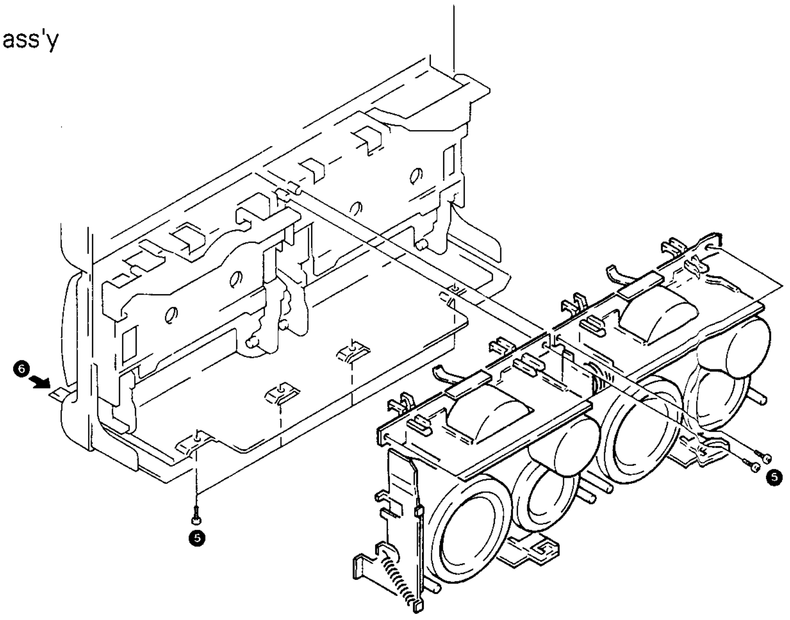
3-3. Remove 6 screws (❸) and front side pcbs.

3-4. Pull out 8 connectors (❹).



3-5. Remove 8 screws (❺).

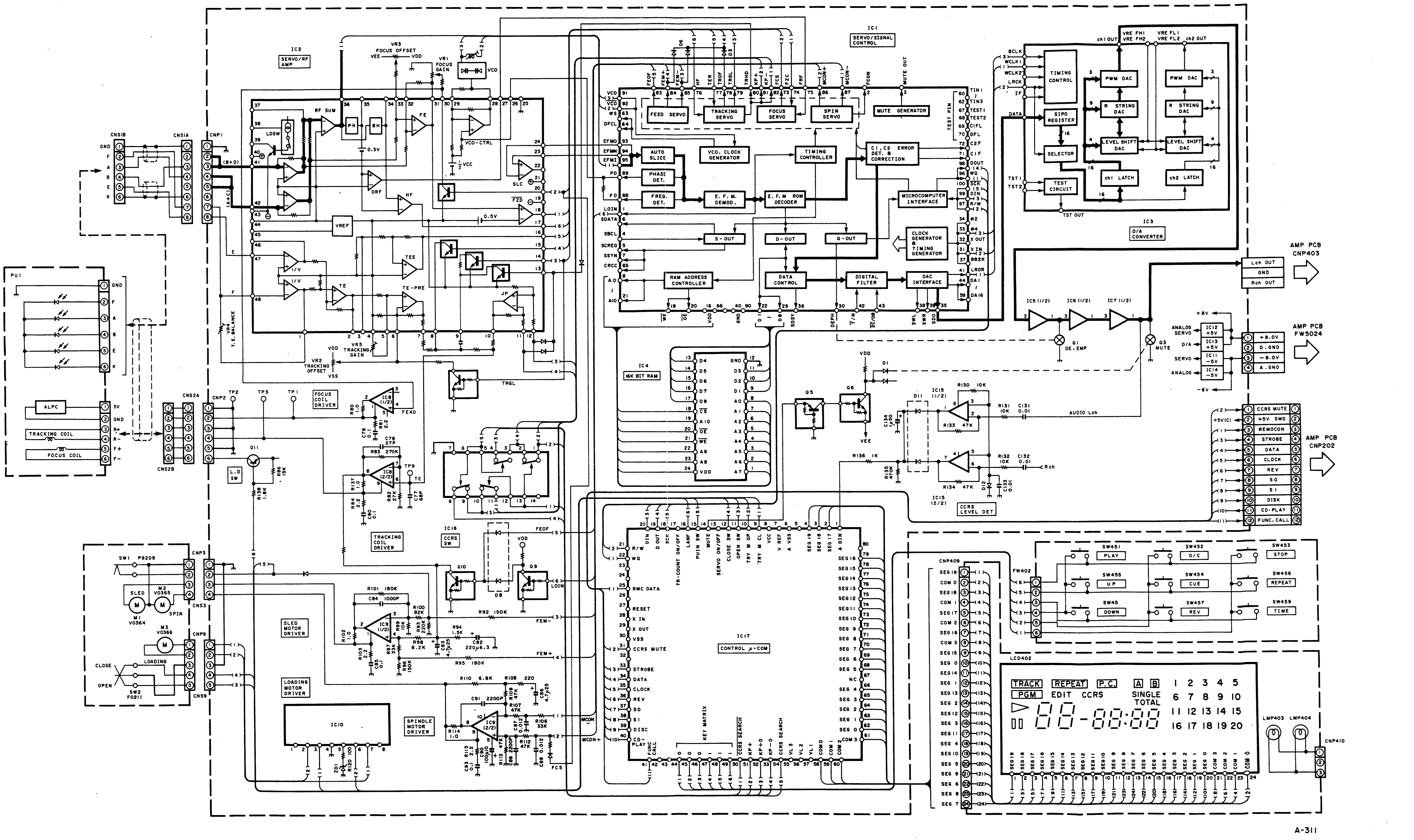
3-6. Push EJECT knob and remove mechanism ass'y (❻).



A-311/X-311 A-311/X-311

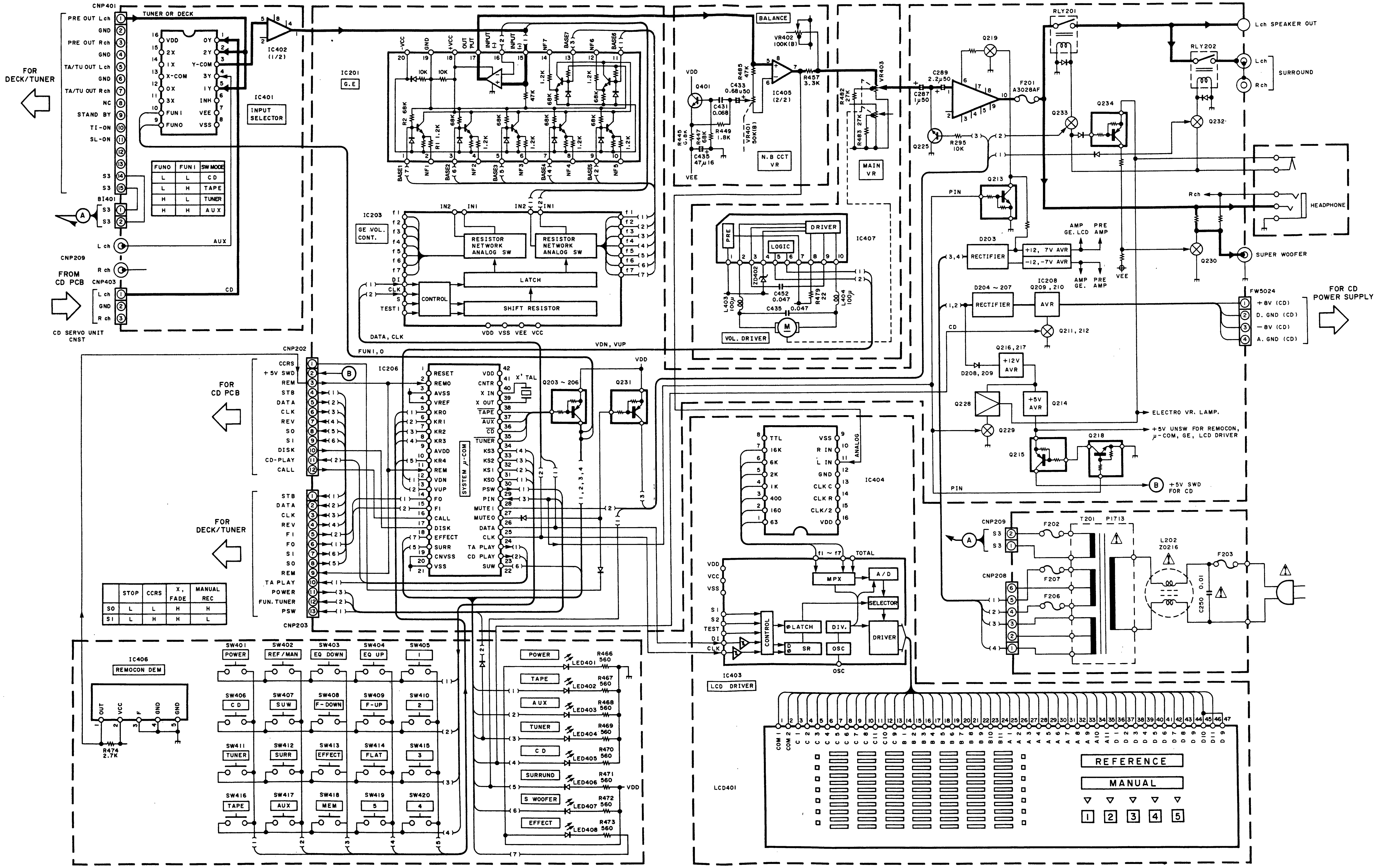
BLOCK DIAGRAM

CD PLAYER


IC1 SERVO/SIGNAL CONTROL
IC2 SERVO/RF AMP
IC3 D/A CONVERTER
IC4 16K BIT RAM
IC17 CONTROL μ-COM
IC10
PU1
ALPC
TRACKING COIL
FOCUS COIL
CNS1B
CNS1A
CNP1
CNS2A
CNS2B
CNP2
CNP3
CNS3
CNP9
CNS9
RF SUM
LDSW
PH
BH
FE
VR3 FOCUS OFFSET
VR1 FOCUS GAIN
VCO
VCO-CTRL
DRF
HF
VREF
SLC
FZD
I/V
TE
TES
TE-PRE
JP
VR4 T.E. BALANCE
VR5 TRACKING GAIN
VR2 TRACKING OFFSET
TRGL
FEED SERVO
TRACKING SERVO
FOCUS SERVO
SPIN SERVO
MUTE GENERATOR
AUTO SLICE
VCO. CLOCK GENERATOR
TIMING CONTROLLER
C1, C2 ERROR DET. & CORRECTION
PHASE DET.
FREQ. DET.
E. F. M. DEMOD.
E. F. M ROM DECODER
MICROCOMPUTER INTERFACE
S-OUT
D-OUT
Q-OUT
CLOCK GENERATOR & TIMING GENERATOR
RAM ADDRESS CONTROLLER
DATA CONTROL
DIGITAL FILTER
DAC INTERFACE
TIMING CONTROL
SIPO REGISTER
SELECTOR
TEST CIRCUIT
PWM DAC
R STRING DAC
LEVEL SHIFT DAC
ch1 LATCH
ch2 LATCH
ch1 OUT
ch2 OUT
IC5 (1/2)
IC6 (1/2)
IC7 (1/2)
Q1 DE. EMP
Q3 MUTE
AMP PCB CNP403
Lch OUT
GND
Rch OUT
AMP PCB FW5024
+8.0V
D.GND
-8.0V
A.GND
IC12 +5V
IC13 +5V
IC11 -5V
IC14 -5V
FOCUS COIL DRIVER
IC8 (1/2)
IC8 (2/2)
FEAO
TP1
TP2
TP3
TP9
Q11
L.D SW
TRACKING COIL DRIVER
IC16 CCRS SW
Q10
Q9
D8
FEOF
LOIN
SLED MOTOR DRIVER
IC9 (1/2)
IC9 (2/2)
FEM-
FEM+
LOADING MOTOR DRIVER
SPINDLE MOTOR DRIVER
MCON-
MCON+
FCS
SW1 P9209
SLED
M1 VO364
M2 VO365
SPIN
M3 VO366
LOADING
CLOSE
OPEN
SW2 FO211
Q5
Q6
IC15 (1/2)
IC15 (2/2)
AUDIO Lch
Rch
CCRS LEVEL DET
AMP PCB CNP202
CCRS MUTE
+5V SWD
REMOCON
STROBE
DATA
CLOCK
REV
SO
SI
DISK
CD-PLAY
FUNC. CALL
KEY MATRIX
CNP409
FW402
SW451 PLAY
SW452 O/C
SW453 STOP
SW455 UP
SW454 CUE
SW456 REPEAT
SW45 DOWN
SW457 REV
SW459 TIME
LCD402
TRACK
REPEAT
P.C.
A
B
PGM
EDIT
CCRS
SINGLE
TOTAL
1 2 3 4 5
6 7 8 9 10
11 12 13 14 15
16 17 18 19 20
LMP403
LMP404
CNP410
A-311

BLOCK DIAGRAM

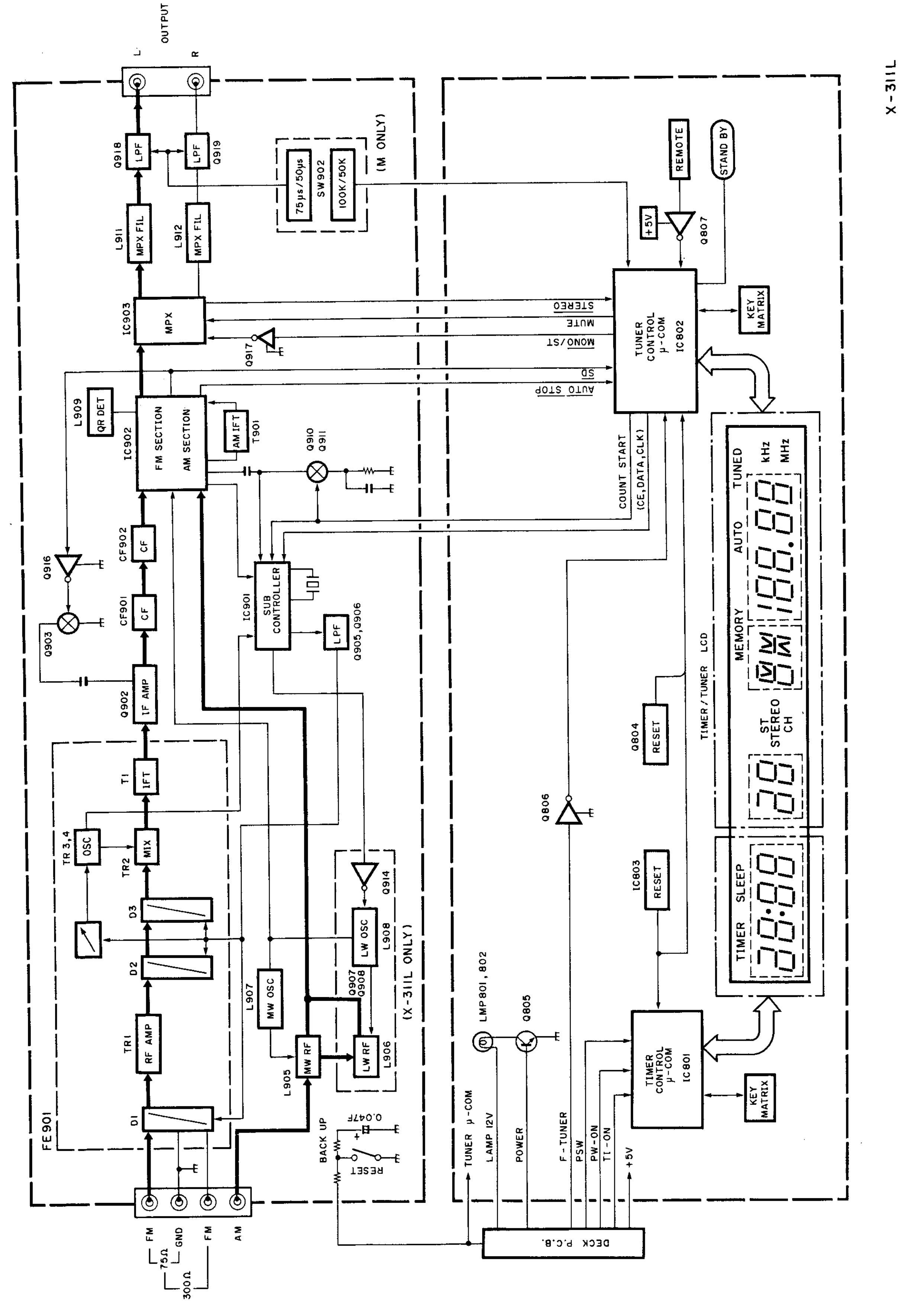
AMPLIFIER & GRAPHIC EQULIZER


CNP401
PRE OUT Lch
GND
PRE OUT Rch
TA/TU OUT Lch
TA/TU OUT Rch
NC
STAND BY
TI-ON
SL-ON
FOR DECK/TUNER
TUNER OR DECK
IC401 INPUT SELECTOR
IC402 (1/2)
FROM CD PCB
CNP209
CNP403
CD SERVO UNIT CNST
AUX
CD
IC201 G.E
IC203 GE VOL. CONT.
RESISTOR NETWORK ANALOG SW
LATCH
CONTROL
SHIFT RESISTOR
BALANCE
VR402 100K(B)
IC405 (2/2)
N.B CCT VR
VR401 50K(B)
MAIN VR
VR403
IC407
DRIVER
LOGIC
PRE
VOL. DRIVER
RLY201
RLY202
Lch SPEAKER OUT
SURROUND
HEADPHONE
SUPER WOOFER
F201 A3028AF
Q219
Q225
Q233
Q234
Q232
Q213
Q230
D203 RECTIFIER
+12, 7V AVR
-12, -7V AVR
D204 ~ 207 RECTIFIER
IC208 Q209, 210 AVR
Q211, 212
FW5024
+8V (CD)
D. GND (CD)
-8V (CD)
A. GND (CD)
FOR CD POWER SUPPLY
Q216, 217 +12V AVR
D208, 209
Q228
+5V AVR
Q214
ELECTRO VR. LAMP.
+5V UNSW FOR REMOCON, μ-COM, GE, LCD DRIVER
Q229
Q218
Q215
+5V SWD FOR CD
PIN
CNP202
FOR CD PCB
FOR DECK/TUNER
CNP203
IC206 SYSTEM μ-COM
Q203 ~ 206
Q231
IC404
IC403 LCD DRIVER
MPX
A/D
SELECTOR
LATCH
DIV.
SR
OSC
DRIVER
CNP208
T201
F202
F203
F206
F207
L202 Z0216
C250 0.01
IC406 REMOCON DEM
R474 2.7K
SW401 POWER
SW402 REF/MAN
SW403 EQ DOWN
SW404 EQ UP
SW405 1
SW406 CD
SW407 SUW
SW408 F-DOWN
SW409 F-UP
SW410 2
SW411 TUNER
SW412 SURR
SW413 EFFECT
SW414 FLAT
SW415 3
SW416 TAPE
SW417 AUX
SW418 MEM
SW419 5
SW420 4
LED401 POWER
LED402 TAPE
LED403 AUX
LED404 TUNER
LED405 CD
LED406 SURROUND
LED407 S WOOFER
LED408 EFFECT
LCD401
REFERENCE
MANUAL

FUNO	FUN1	SW MODE
L	L	CD
L	H	TAPE
H	L	TUNER
H	H	AUX

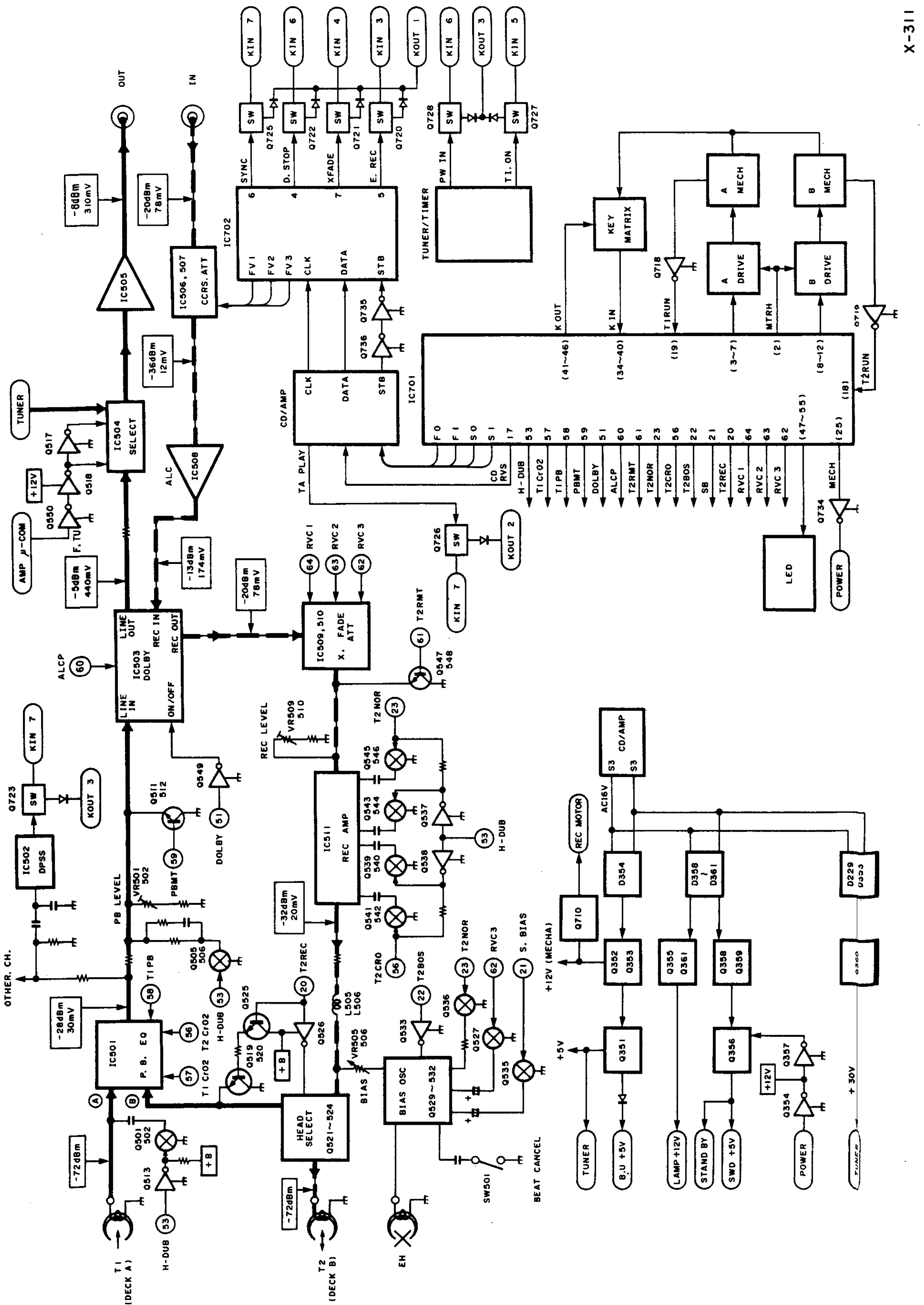
	STOP	CCRS	X, FADE	MANUAL REC
SO	L	L	H	H
SI	L	H	H	L

BLOCK DIAGRAM


OUTPUT
L
R
X-311L
Q918
LPF
Q919
LPF
75μs/50μs
SW902
100K/50K
(M ONLY)
L911
MPX FIL
L912
MPX FIL
IC903
MPX
Q917
STEREO
MUTE
MONO/ST
SD
AUTO STOP
REMOTE
STAND BY
+5V
Q807
TUNER CONTROL μ-COM IC802
KEY MATRIX
COUNT START
(CE,DATA,CLK)
L909
QR DET
IC902
FM SECTION
AM SECTION
AM IFT
T901
Q910
Q911
CF902
CF
CF901
CF
Q916
Q903
Q902
IF AMP
IC901
SUB CONTROLLER
LPF
Q905,Q906
T1
IFT
TR 3,4
OSC
TR2
MIX
D3
D2
TR1
RF AMP
D1
FE901
Q914
LW OSC
L908
(X-311L ONLY)
L907
MW OSC
Q907
Q908
L905
MW RF
LW RF
L906
BACK UP
0.047F
RESET
TIMER/TUNER LCD
TUNED
kHz
MHz
AUTO
MEMORY
ST
STEREO
CH
TIMER
SLEEP
Q804
RESET
Q806
IC803
RESET
LMP801,802
Q805
TIMER CONTROL μ-COM IC801
KEY MATRIX
TUNER μ-COM
LAMP 12V
POWER
F-TUNER
PSW
PW-ON
TI-ON
+5V
DECK P.C.B.
FM
75Ω
GND
FM
300Ω
AM

A-311/X-311

BLOCK DIAGRAM


X-311
OUT
IN
KIN 7
KIN 6
KIN 4
KIN 3
KOUT 1
KIN 6
KOUT 3
KIN 5
SW
Q725
Q722
Q721
Q720
Q728
Q727
SYNC
D. STOP
XFADE
E. REC
PW IN
T1. ON
IC702
FV1
FV2
FV3
CLK
DATA
STB
TUNER/TIMER
KEY MATRIX
A MECH
B MECH
A DRIVE
B DRIVE
Q718
Q719
K OUT
K IN
T1RUN
MTRH
T2RUN
IC701
-8dBm 310mV
-20dBm 78mV
IC505
IC506, 507 CCRS.ATT
Q735
Q736
CD/AMP
-36dBm 12mV
TUNER
IC504 SELECT
Q517
Q518
+12V
Q550
AMP µ-COM
F.TU
ALC
IC508
TA PLAY
CD RVS
H-DUB
T1CrO2
T1PB
PBMT
DOLBY
ALCP
T2RMT
T2NOR
T2CRO
T2BOS
SB
T2REC
RVC1
RVC2
RVC3
MECH
Q734
LED
POWER
Q726
KOUT 2
KIN 7
-5dBm 440mV
-13dBm 174mV
-20dBm 78mV
IC509, 510 X. FADE ATT
T2RMT
Q547 548
ALCP
IC503 DOLBY
LINE OUT
REC IN
REC OUT
LINE IN
ON/OFF
REC LEVEL
VR509 510
Q545 546
Q543 544
Q537
Q538
Q539 540
Q541 542
IC511 REC AMP
H-DUB
KIN 7
Q723
KOUT 3
IC502 DPSS
Q511 512
Q549
DOLBY
PBMT
PB LEVEL
VR501 502
-32dBm 20mV
CD/AMP
S3
AC16V
REC MOTOR
D354
D358 ~ D361
D229
Q710
Q352 Q353
Q355 Q361
Q358 Q359
+12V (MECHA)
OTHER. CH.
T1PB
Q505 506
T2REC
Q525
Q526
T2CRO
T2BOS
T2NOR
RVC3
S. BIAS
-28dBm 30mV
IC501 P. B. EQ
T2 CrO2
H-DUB
T1 CrO2
Q519 520
+B
L505 L506
VR505 506
BIAS
Q533
Q536
Q527
Q535
BIAS OSC Q529~532
+5V
Q351
Q356
Q357
+12V
Q354
+30V
HEAD SELECT Q521~524
Q501 502
Q513
+B
-72dBm
-72dBm
SW501
BEAT CANCEL
TUNER
B.U +5V
LAMP+12V
STAND BY
SWD +5V
POWER
T1 (DECK A)
H-DUB
T2 (DECK B)
EH

CSSSETTE DECK

ADJUSTMENT

CD PLAYER

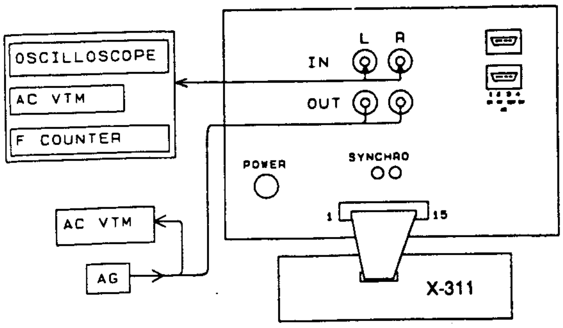
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	PLAYER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	VCO	–	Connect a frequency counter to VCO (TP10)	STOP	L1	4.32MHz ± 15kHz	(a)
2	FOCUS OFFSET	–	Connect DC voltmeter to FOCUS (TP1)	STOP	VR3	0 ± 50mV	
3	TRACKING OFFSET	–	Connect DC voltmeter to TRACKING (TP3)	STOP	VR2	0 ± 50mV	
4	TRACKING ERROR BALANCE	Test disc Type 4	Connect an oscilloscope to TE (TP4) through L.P.F.	Set A-311 to TEST MODE. Connect pin 6 of IC8 to GND. PLAY	TE BALANCE VR4	Symmetry between upper and lower patterns, or DC = 0	(c)
5	FOCUS GAIN	Test disc Type 4 Apply signal of 1kHz, 100mVrms to FE (TP7) and FP (TP8)	Connect a BPF to FE (TP7) and FP (TP8) to which connect an oscilloscope or AC voltmeters.	PLAY	FOCUS GAIN VR1	Two VTVMs should read the same value.	(e)
6	TRACKING GAIN	Test disc Type 4 Apply signal of 1kHz, 100mVrms to TE (TP4) and TP (TP5)	Connect a BPF to TE (TP4) and TP (TP5) to which connect an oscilloscope or AC voltmeters.	PLAY	TRACKING GAIN VR5	Two VTVMs should read the same value.	(e)

TEST MODE: Insert AC plug to wall outlet under pressing REPEAT and TIME DISPLAY knobs.

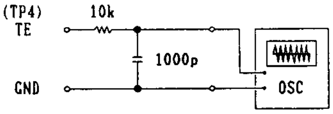
When using Power Supply Jig RM-90PS (KENWOOD made, extra charge) for X-311/ X-311L, use the following procedure to check and repair unit.

1. Connect TP705 to GND line.
2. Connect R769 to GND line.
3. Connect test equipments and unit to Jig as figure.

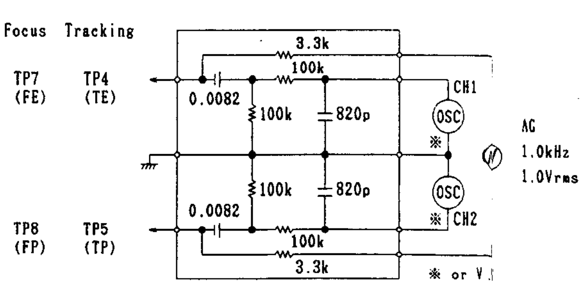
RM-90PS Connections


OSCILLOSCOPE
AC VTM
F COUNTER
AC VTM
AG
L
R
IN
OUT
POWER
SYNCHRO
1
15
X-311

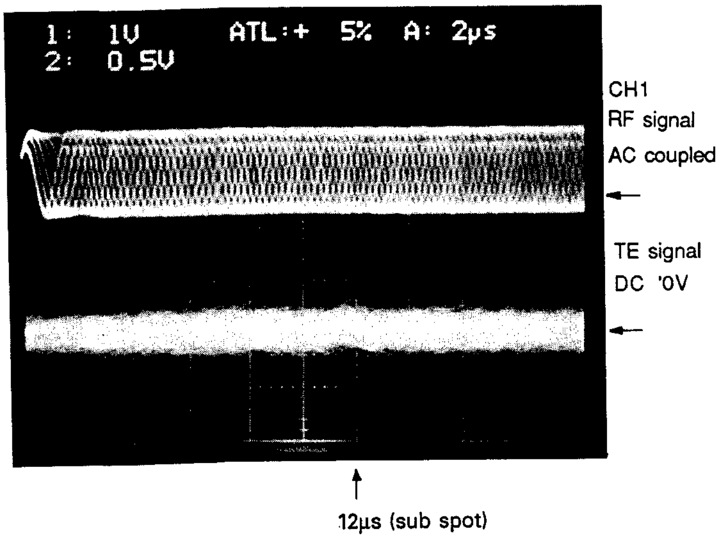
(c) T.E balance L.P.F


(TP4)
TE
GND
10k
1000p
OSC

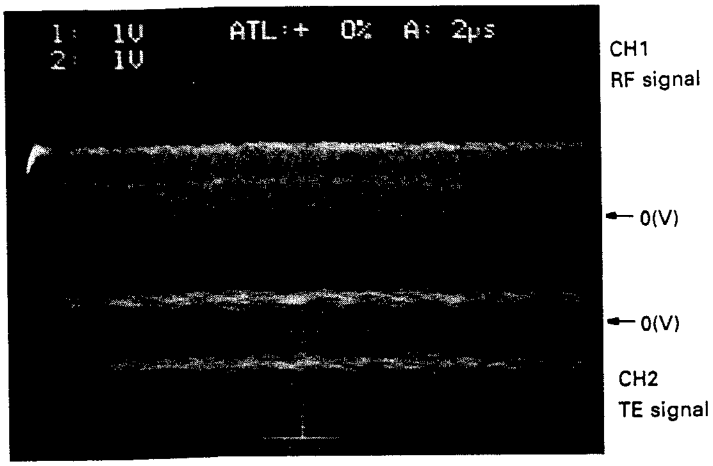
(e) Focus and Tracking gain B.P.F


Focus
Tracking
TP7
(FE)
TP4
(TE)
TP8
(FP)
TP5
(TP)
3.3k
100k
0.0082
100k
820p
100k
820p
0.0082
100k
3.3k
OSC
※
CH1
OSC
※
CH2
AC
1.0kHz
1.0Vrms
※ or V.

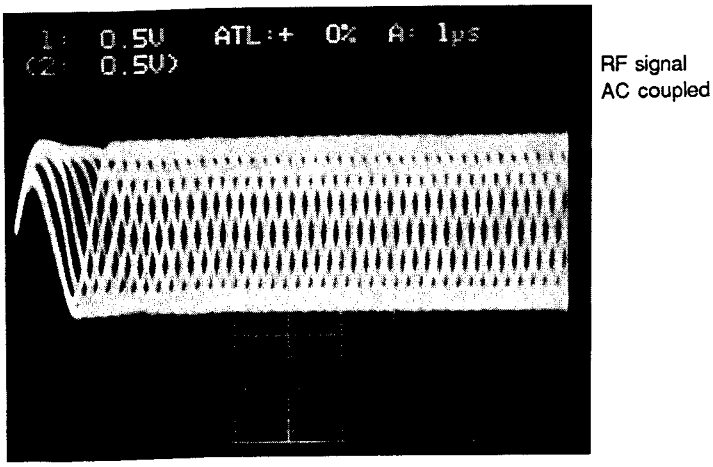
ADJUSTMENT



- RF signal and E.Spot signal in test mode (PLAY).
- If the diffraction grating has been adjusted properly, the influence of triggering is observed on the E.Spot waveform of approx. 12µs after RF signal, in the form of a projection.



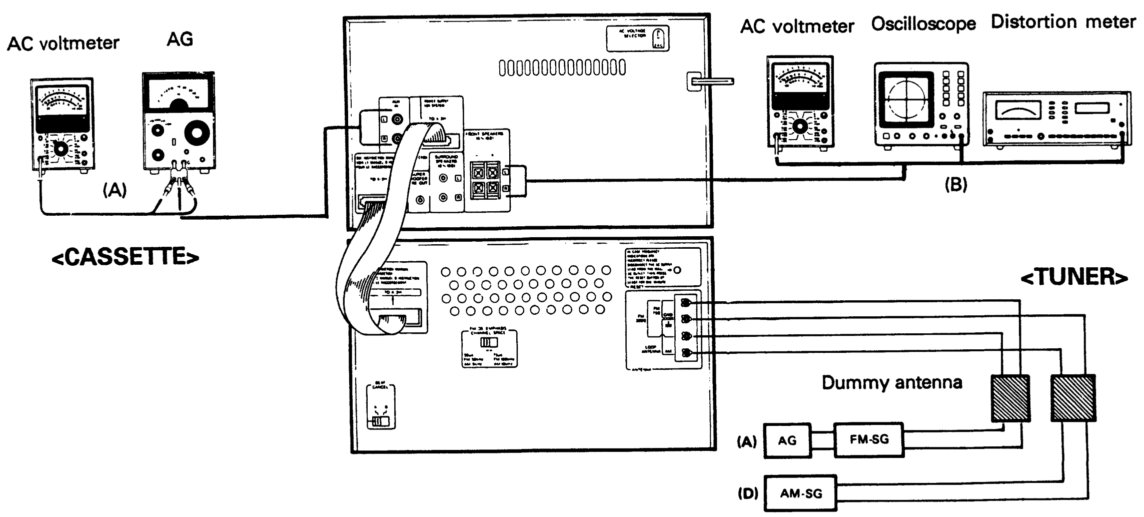
- RF signal and T.Error signal; in test mode (Focusing ON). (Disc type 4)
- Adjust T.Error so that the waveform is symmetrical above and below 0V (VR4).



- RF signal in test mode (PLAY).
- Perform the tangential and focusing offset adjustments so that each of the center cross points are focused into one point on the display. The crossing points above and below the center shall also be displayed clearly.

TUNER

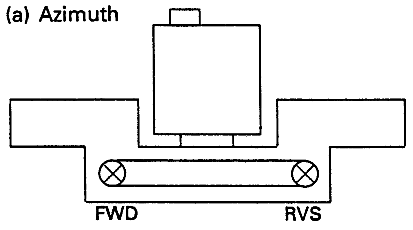
NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION	Unless otherwise specified, the individual switches should be set as following: SELECTOR: FM MODE: FM MODE/AUTO						
Repeat alignments 1 and 2 several times.							
1	DISCRIMINATOR	(A) 98.0MHz 1kHz, ±75kHz dev 60dBμ(ANT input)	Connect a DC voltmeter TP901.	MONO 98.0MHz	L909	0V	(b)
2	TUNING LEVEL	(A) 98.0MHz 0dev 27dBμ(ANT input)300Ω	(B)	AUTO or MONO 98.0MHz	VR901	Adjust VR901 and stop at the point where FL1 (TUNED) goes on.	
AM-MW SECTION	Keep the AM loop antenna installed. SELECTOR: AM						
(1)	BAND EDGE (1)	–	Connect a DC voltmeter between TP903 and GND.	530kHz (522kHz)	L907	1.1V ± 0.1V	(a)
(2)	BAND EDGE (2)	–	Connect a DC voltmeter between TP903 and GND.	1620kHz (1602kHz)	–	Confirm 7.4V ± 0.8V	(a)
Repeat alignments (1) and (2) serveral times.							
(3)	RF ALIGNMENT (1)	(D) 600kHz 400Hz, 30% mod	(B)	600kHz (603kHz)	L905	Maximum amplitude and symmetry of the oscilloscope display.	
(4)	RF ALIGNMENT (2)	(D) 1440kHz 400Hz, 30% mod	(B)	1400kHz (1404kHz)	TC901	Maximum amplitude and symmetry of the oscilloscope display.	
(5)	IF	(D) 1000kHz 400Hz, 30% mod	(B)	1000kHz (999kHz)	T901	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (3) and (4) several times.							
AM-LW SECTION	Keep the AM loop antenna installed. SELECTOR: LW						
(6)	BAND EDGE (1)	–	Connect a DC voltmeter between TP903 and GND.	153kHz	L908	1.5V ± 0.1V	(a)
(7)	BAND EDGE (2)	–	–	281kHz	–	Confirm 5.5V ± 0.5V	(a)
Repeat alignments (6) and (7) several times.							
(8)	RF ALIGNMENT (1)	(D) 162kHz 400Hz, 30% mod	(B)	162kHz	L906	Maximum amplitude and symmetry of the oscilloscope display.	
(9)	RF ALIGNMENT (2)	(D) 261kHz 400Hz, 30% mod	(B)	261kHz	TC902	Maximum amplitude and symmetry of the oscilloscope display.	
Repeat alignments (8) and (9) several times.							



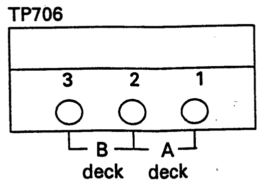
CSSSETTE DECK

NO.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	CASSETTE TAPE DECK SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
CASSETTE DECK SECTION	TAPE: NORMAL, DOLBY: OFF, INPUT: LINE					0dBs = 0.775V	
I REC/PLAY HEAD							
[1]	DEMAGNETIZATION	–	–	POWER: OFF	REC/PLAY head	Demagnetize the REC/PLAY head with a head demagnetizer.	
[2]	CLEANING	–	–	PLAY	REC/PLAY head erase head, capstan, pinch roller.	Clean the REC/PLAY head erase head, capstan and pinch roller using a cotton swab slightly damped with alchol.	
[3]	AZIMUTH	SCC1727 MTT-114, TCC-153 10kHz, -10dB	(B)	PLAY	Azimuth adjustment screw	Maximum output.	(a)
II PC BOARD							
<1>	TAPE SPEED (NORMAL)	SCC1727 MTT-111, TCC-110 3kHz -4dB	(B)	PLAY	DECK A : VR701 DECK B : VR703	Adjust the tape speed so that a 3kHz signal is produced at the center of the tape.	(b)
<2>	TAPE SPEED (HI SPEED)	SCC1727 MTT-111, TCC-110 3kHz -4dB	(B)	Connect TP706-1 and TP706-2 (DECK A) or TP706-2 and TP706-3 (DECK B) PLAY	DECK A : VR702 DECK B : VR704	Adjust the tape speed so that a 5kHz signal is produced at the center of the tape.	(b)
<3>	PLAYBACK ** LEVEL	SCC1727 315Hz (-4dB)	(B)	PLAY	VR501(L) VR502(R)	Output level : -6.0dBm	(c)
		MTT-256 315Hz (-4dB)				Output level : -6.0dBm	
<4>	BIAS CURRENT **	(A) 1kHz, -28dBm 10kHz, -28dBm (-28dBm = 30mV)	(B)	Adjust AG output so that the SPEAKER output becomes -28dBm at 1kHz, then record and reproduce signal of 1kHz and 10kHz in alternation.	VR505(L) VR506(R)	Record 1kHz and 10kHz in alternation and adjust the variable resistors which control the bias current so that the same playback level is obtained.	(d)
<5>	RECORD LEVEL **	(A) 1kHz, -8dBm (-8dBm = 310mV)	(B)	Record and reproduce a 1kHz signal under the conditions set in <4>.	VR509(L) VR510(R)	Adjust the variable resistors so that a playback level of -10dBm (240mV) is obtained.	(e)

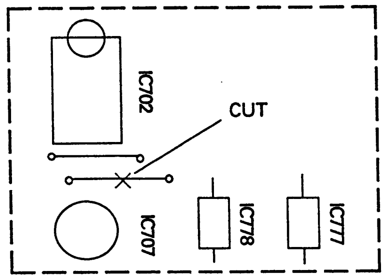
** Set VOLUME knob to the condition NB: MIN, GE EFFECT: OFF, AUX input: 200mV, speaker output 200mV/8Ω.


(a) Azimuth

(b) Tape speed

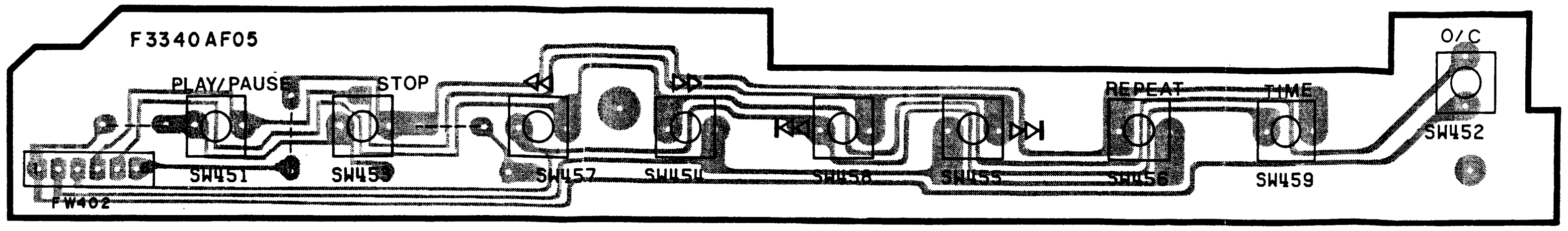


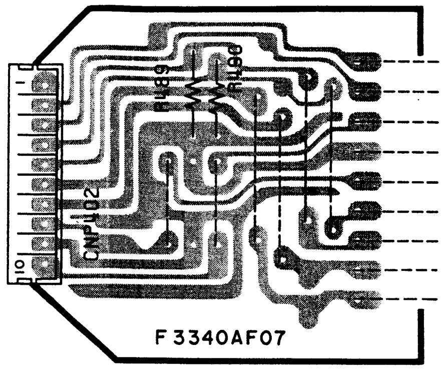
(d) How to set to record mode.

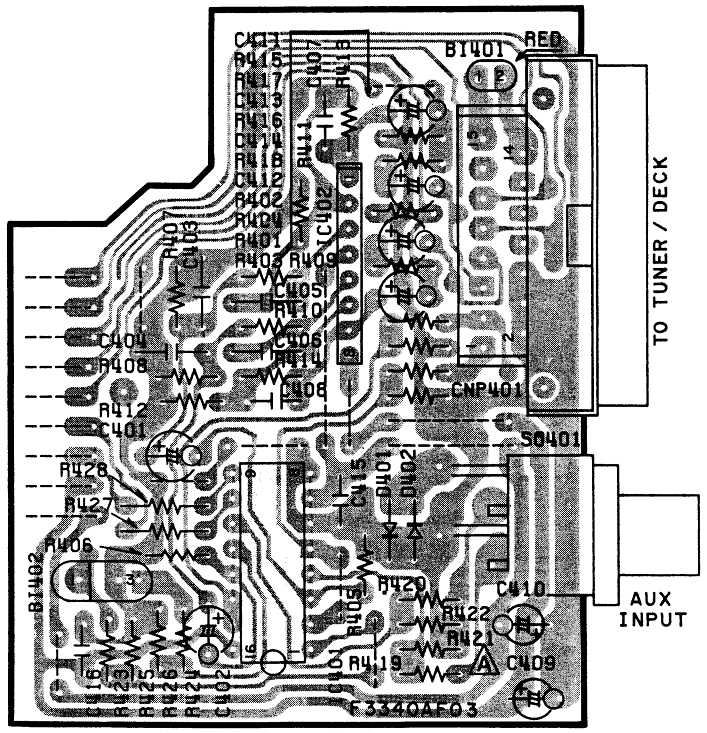


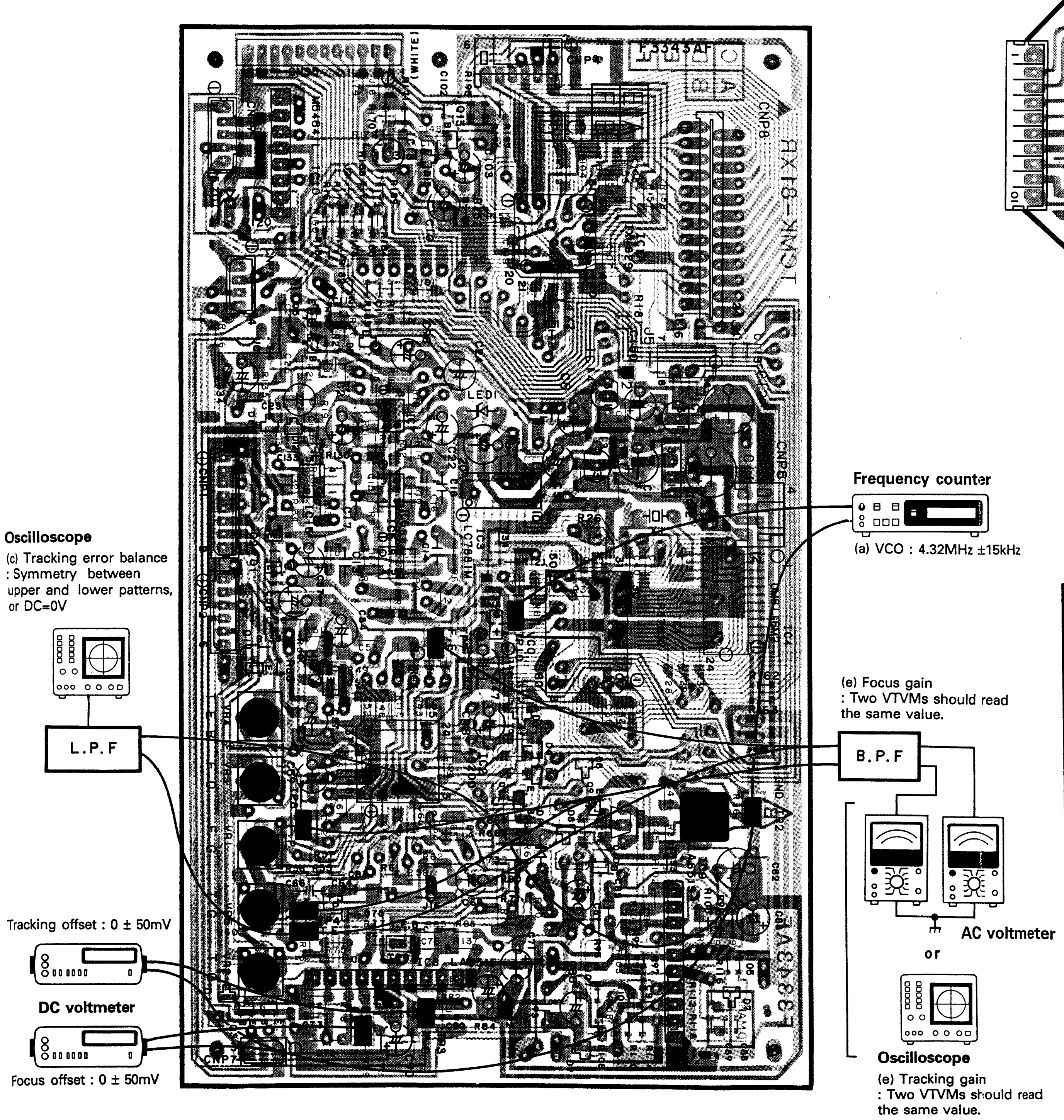
Bias Current and Record Level adjustments procedure is need to cut Jumper Wire showing figure. If end repair and check, connect cut jumper to original position.

PC BOARD (COMPONENT SIDE VIEW : A-311)


F3340AF05
PLAY/PAUSE
STOP
REPEAT
TIME
O/C
SW451
SW453
SW457
SW454
SW458
SW455
SW456
SW459
SW452
FW402


CNP402
F3340AF07


B1401
RED
TO TUNER / DECK
CNP401
SO401
AUX
INPUT
C410
C409
R422
R421
R419
R420
B1402
R406
R427
R428
C401
R412
R408
C404
C408
R414
C406
R410
C405
R403
R409
R401
R404
R402
C412
R418
C414
R416
C413
R417
R415
C411
C407
D401
D402
C415
F3340AF03


F3343AF
CNP8
CNP6
CNP7
LED1
LC7861N
IC4
Frequency counter
Oscilloscope
L.P.F
B.P.F
AC voltmeter
or
Oscilloscope
DC voltmeter

Oscilloscope
(c) Tracking error balance
: Symmetry between upper and lower patterns, or DC=0V

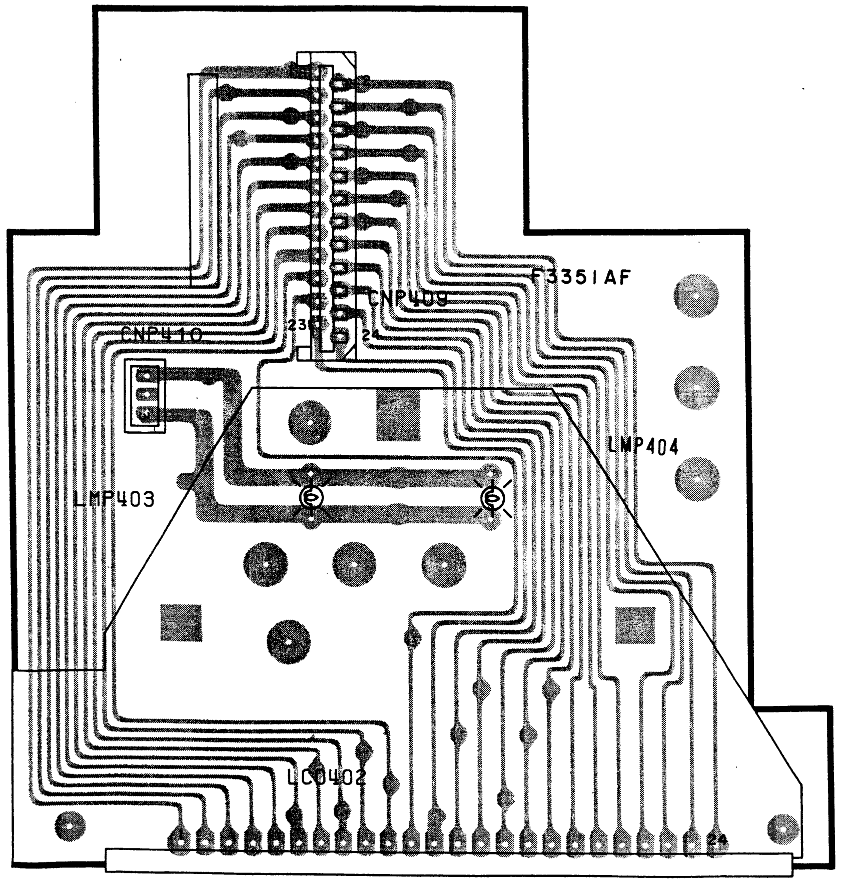
(a) VCO : 4.32MHz ±15kHz

(e) Focus gain
: Two VTVMs should read the same value.

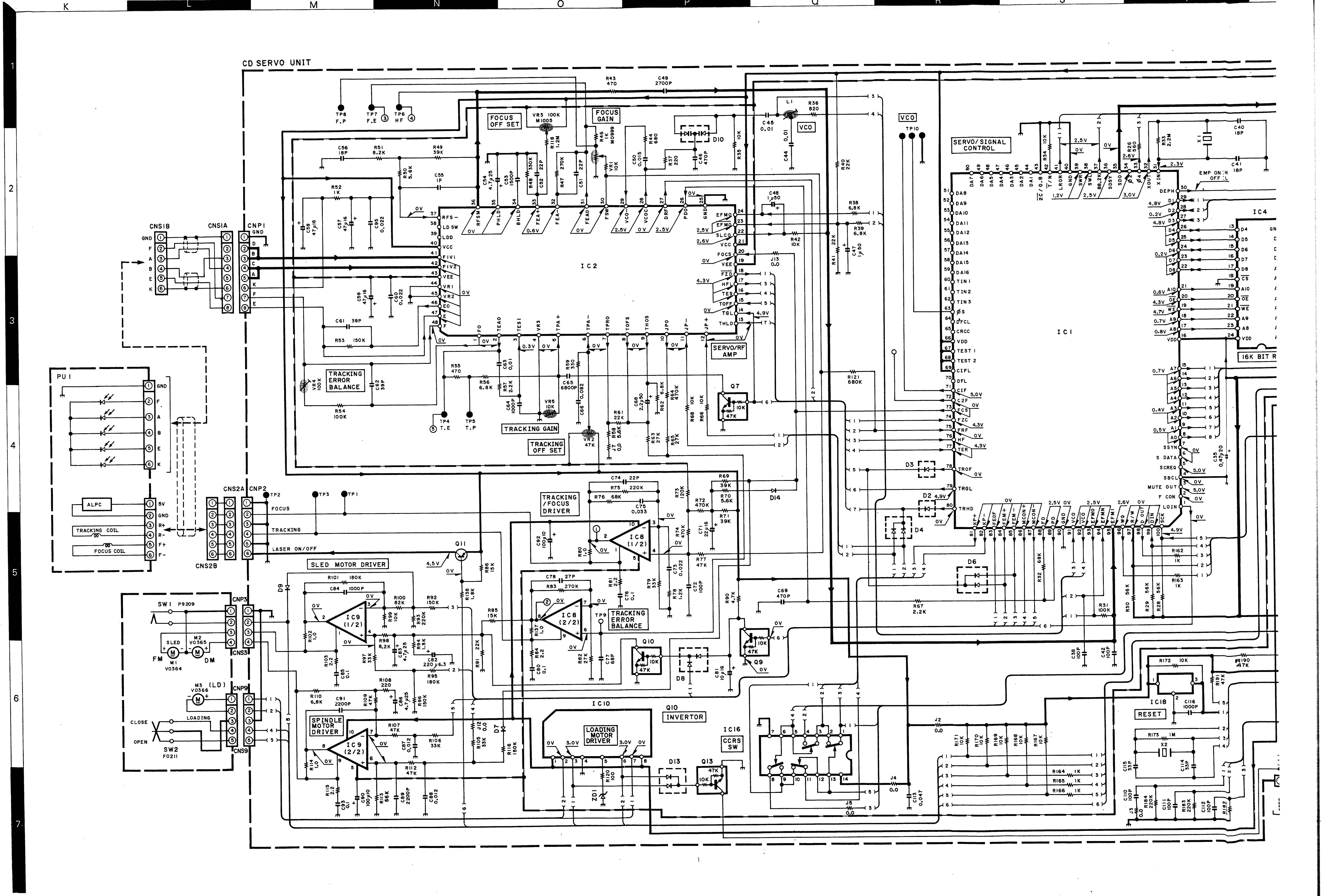
Tracking offset : 0 ± 50mV

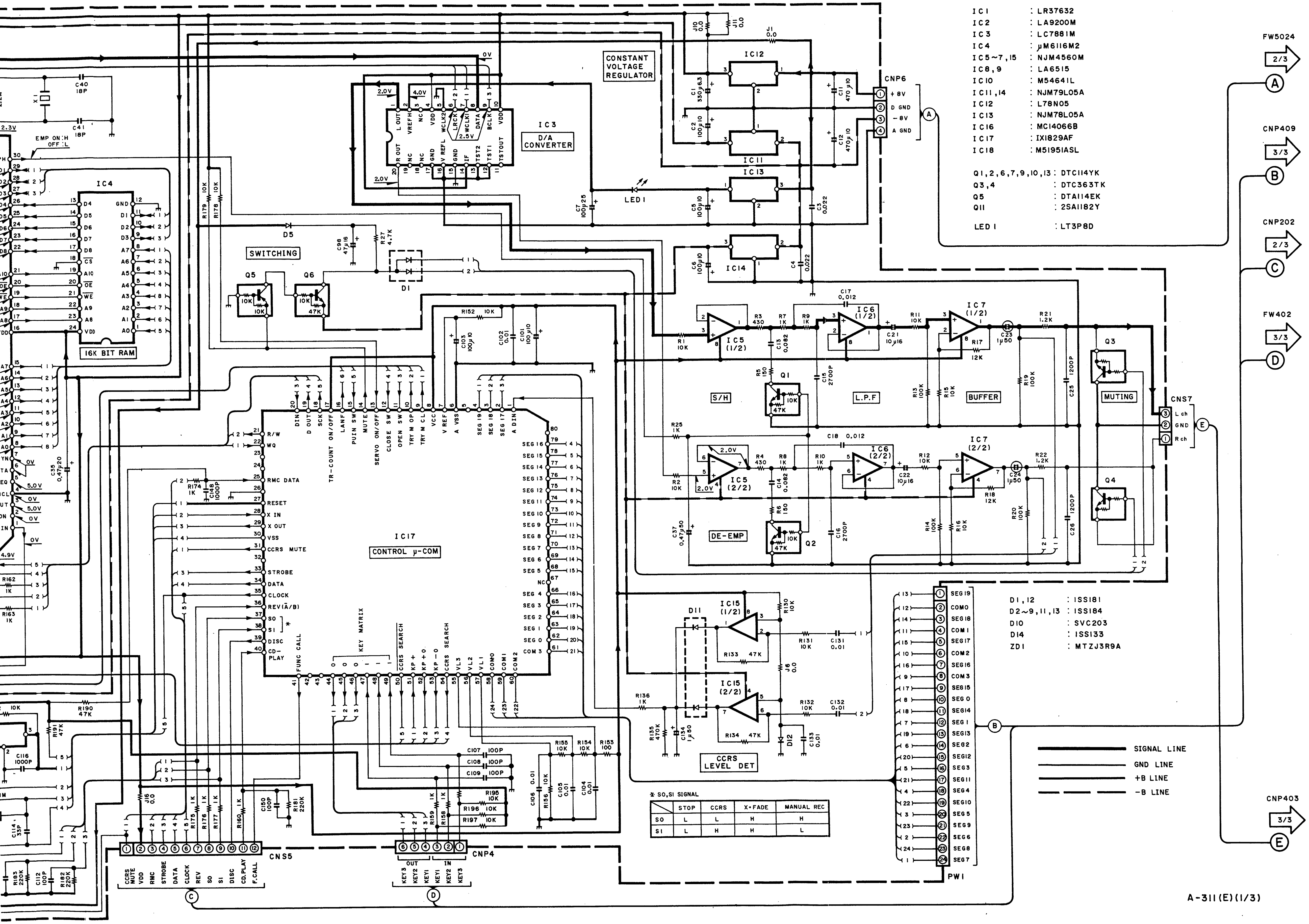
Focus offset : 0 ± 50mV

(e) Tracking gain
: Two VTVMs should read the same value.


F3351AF
CNP409
CNP410
LMP403
LMP404
LCD402
23
24

Refer to the schematic diagram for the values of resistors and capacitors.


K
L
M
N
O
P
Q
R
S
1
2
3
4
5
6
7
CD SERVO UNIT
FOCUS OFF SET
FOCUS GAIN
VCO
SERVO/SIGNAL CONTROL
IC 2
IC 1
IC4
16K BIT R
SERVO/RF AMP
TRACKING ERROR BALANCE
TRACKING GAIN
TRACKING OFF SET
TRACKING /FOCUS DRIVER
SLED MOTOR DRIVER
SPINDLE MOTOR DRIVER
LOADING MOTOR DRIVER
IC10
Q10 INVERTOR
IC16 CCRS SW
IC18 RESET
IC8 (1/2)
IC8 (2/2)
IC9 (1/2)
IC9 (2/2)
PU I
ALPC
TRACKING COIL
FOCUS COIL
CNS1B
CNS1A
CNP1
CNS2A
CNP2
CNS2B
CNP3
CNS3
CNP9
CNS9
FOCUS
TRACKING
LASER ON/OFF
SW1 P9209
SLED
M1 V0364
M2 V0365
FM
DM
M3 (LD) V0366
CLOSE
OPEN
LOADING
SW2 F0211
TP8 F.P
TP7 F.E
TP6 HF
TP4 T.E
TP5 T.P
TP1
TP2
TP3
TP9
TP10
VR1
VR2 47K
VR3 100K M1005
VR4 100K
VR5
Q7
Q9
Q10
Q11
Q13
D3
D4
D6
D7
D8
D9
D10
D13
D14
ZD1
L1
X1
X2
EMP ON:H OFF:L


CONSTANT VOLTAGE REGULATOR
IC3 D/A CONVERTER
IC4
16K BIT RAM
SWITCHING
IC17 CONTROL μ-COM
S/H
L.P.F
BUFFER
MUTING
DE-EMP
CCRS LEVEL DET
IC12
IC11
IC13
IC14
LED1
CNP6
+8V
D GND
-8V
A GND
CNS7
L ch
GND
R ch
FW5024 2/3
CNP409 3/3
CNP202 2/3
FW402 3/3
CNP403 3/3
CNS5
CNP4
PW1
CCRS MUTE
VDD
RMC
STROBE
DATA
CLOCK
REV
SO
SI
DISC
CD.PLAY
F.CALL
OUT
IN
KEY3
KEY2
KEY1
KEY1
KEY2
KEY3

IC1 : LR37632
IC2 : LA9200M
IC3 : LC7881M
IC4 : μM6116M2
IC5~7,15 : NJM4560M
IC8,9 : LA6515
IC10 : M54641L
IC11,14 : NJM79L05A
IC12 : L78N05
IC13 : NJM78L05A
IC16 : MC14066B
IC17 : IX1829AF
IC18 : M51951ASL

Q1,2,6,7,9,10,13 : DTC114YK
Q3,4 : DTC363TK
Q5 : DTA114EK
Q11 : 2SA1182Y

LED1 : LT3P8D

D1,12 : 1SS181
D2~9,11,13 : 1SS184
D10 : SVC203
D14 : 1SS133
ZD1 : MTZJ3R9A

※ SO,SI SIGNAL

	STOP	CCRS	X•FADE	MANUAL REC
SO	L	L	H	H
SI	L	H	H	L

━━━━	SIGNAL LINE
────	GND LINE
────	+B LINE
— — —	-B LINE

A-311(E)(1/3)

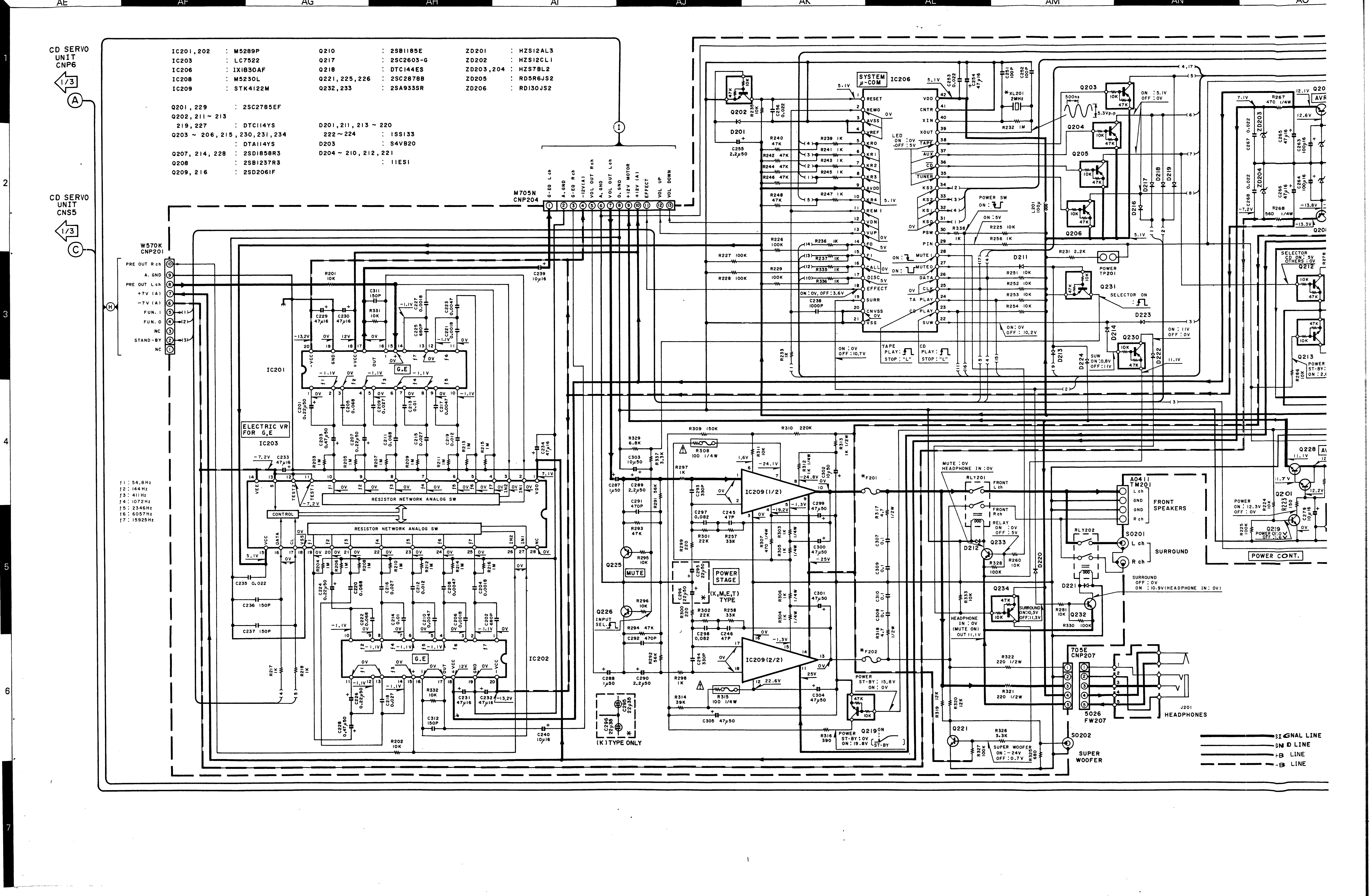
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

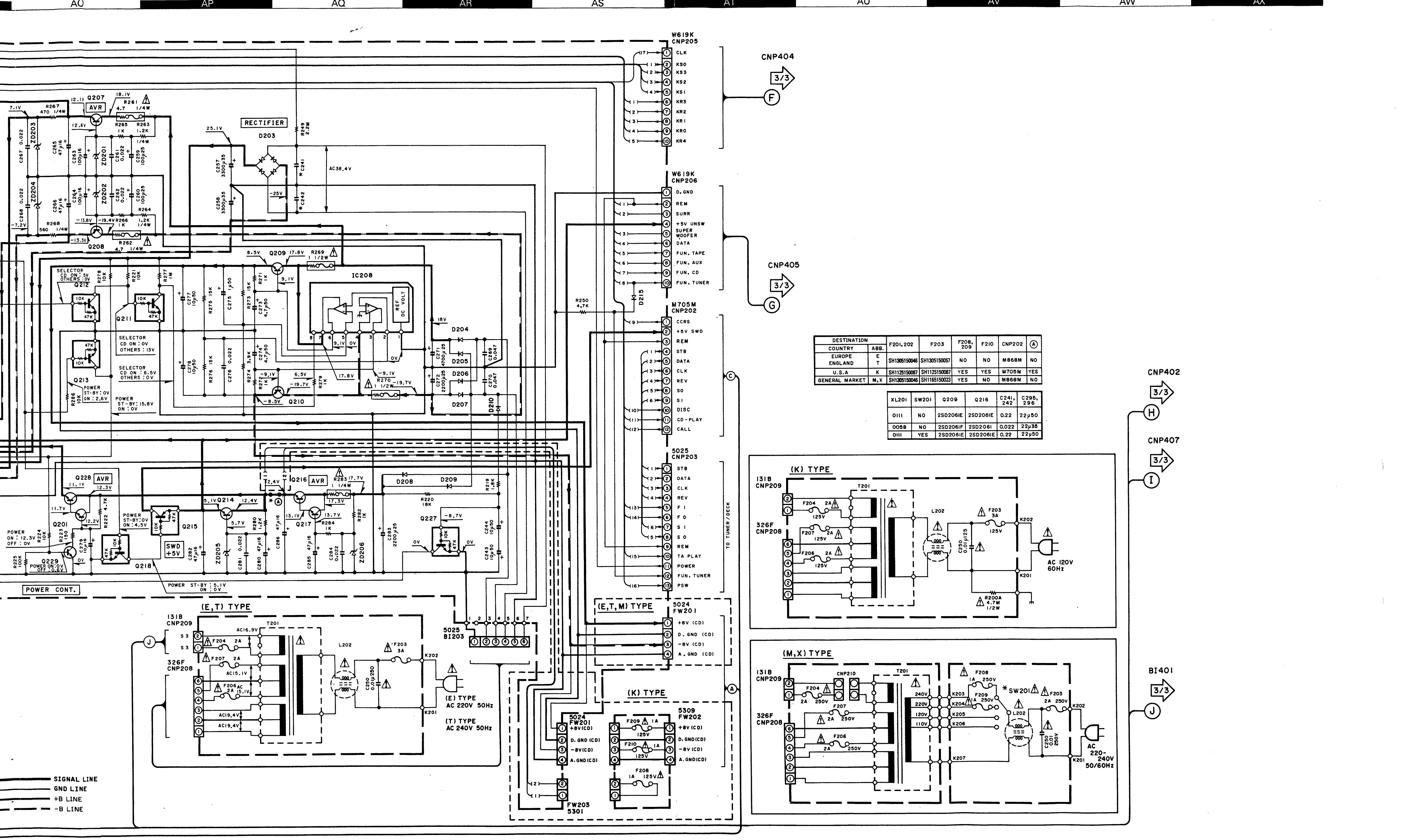
CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

A-311

Y09-3580-00

KENWOOD


AE
AF
AG
AH
AI
AJ
AK
AL
AM
AN
AO
1
2
3
4
5
6
7
CD SERVO UNIT CNP6
1/3
A
CD SERVO UNIT CNS5
1/3
C
IC201,202 : M5289P
IC203 : LC7522
IC206 : IX1830AF
IC208 : M5230L
IC209 : STK4122M
Q210 : 2SB1185E
Q217 : 2SC2603-G
Q218 : DTC144ES
Q221,225,226 : 2SC2878B
Q232,233 : 2SA933SR
ZD201 : HZS12AL3
ZD202 : HZS12CL1
ZD203,204 : HZS7BL2
ZD205 : RD5R6JS2
ZD206 : RD130JS2
Q201,229 : 2SC2785EF
Q202,211 ~ 213
219,227 : DTC114YS
Q203 ~ 206,215,230,231,234 : DTA114YS
Q207,214,228 : 2SD1858R3
Q208 : 2SB1237R3
Q209,216 : 2SD2061F
D201,211,213 ~ 220
222 ~ 224 : 1SS133
D203 : S4VB20
D204 ~ 210,212,221 : 11ES1
I
W570K CNP201
PRE OUT Rch
A.GND
PRE OUT Lch
+7V (A)
-7V (A)
FUN. I
FUN. O
NC
STAND-BY
NC
H
M705N CNP204
G-EQ Lch
A.GND
G-EQ Rch
-12V(A)
VOL OUT Rch
A.GND
VOL OUT Lch
D.GND
+12V MOTOR
+12V (A)
EFFECT
VOL UP
VOL DOWN
IC201
IC202
IC203
ELECTRIC VR FOR G,E
G.E
RESISTOR NETWORK ANALOG SW
CONTROL
f1 : 54.8Hz
f2 : 144Hz
f3 : 411Hz
f4 : 1072Hz
f5 : 2346Hz
f6 : 6057Hz
f7 : 15925Hz
SYSTEM μ-COM
IC206
RESET
REMO
AVSS
VREF
KR0
KR1
KR2
KR3
AVDD
KR4
REM I
VDN
VUP
FO
FI
CALL
DISC
EFFECT
SURR
CNVSS
VSS
VDD
CNTR
XIN
XOUT
TAPE
AUX
CD
TUNER
KS3
KS2
KS1
KS0
PSW
PIN
MUTE I
MUTE O
DATA
CLK
TA PLAY
CD PLAY
SUW
XL201 2MHz
POWER SW
SELECTOR ON
POWER TP201
IC209(1/2)
IC209(2/2)
POWER STAGE
(X,M,E,T) TYPE
(K)TYPE ONLY
MUTE
INPUT SEL.
Q225
Q226
RLY201
RLY202
A0411 TM201
FRONT SPEAKERS
SURROUND
S0201
S0202
SUPER WOOFER
705E CNP207
5026 FW207
J201 HEADPHONES
MUTE : 0V HEADPHONE IN : 0V
HEADPHONE IN : 0V (MUTE ON) OUT 11.1V
SURROUND OFF : 0V ON : 10.9V(HEADPHONE IN : 0V)
SUPER WOOFER ON : -24V OFF : 0.7V
POWER ST-BY : 15.8V ON : 0V
POWER ST-BY : 0V ON : 19.8V
POWER CONT.
SIGNAL LINE
GND LINE
+B LINE
-B LINE


AO
AP
AQ
AR
AS
AT
AU
AV
AW
AX
W619K CNP205
CLK
KS0
KS3
KS2
KS1
KR3
KR2
KR1
KR0
KR4
CNP404
3/3
F
W619K CNP206
D.GND
REM
SURR
+5V UNSW
SUPER WOOFER
DATA
FUN. TAPE
FUN. AUX
FUN. CD
FUN. TUNER
CNP405
3/3
G
M705M CNP202
CCRS
+5V SWD
REM
STB
DATA
CLK
REV
SO
SI
DISC
CD-PLAY
CALL
5025 CNP203
STB
DATA
CLK
REV
FI
FO
SI
SO
REM
TA PLAY
POWER
FUN. TUNER
PSW
TO TUNER/DECK
5024 FW201
+8V (CD)
D. GND (CD)
-8V (CD)
A. GND (CD)
(E,T,M) TYPE
(E,T) TYPE
(K) TYPE
(M,X) TYPE
131B CNP209
326F CNP208
T201
L202
F203 3A
F204 2A
F206
F207 2A
K202
K201
C250 0.01μ250
(E) TYPE AC 220V 50Hz
(T) TYPE AC 240V 50Hz
AC 120V 60Hz
R200A 4.7M 1/2W
CNP210
F208 1A 250V
F209 1A 250V
SW201
AC 220-240V 50/60Hz
5025 BI203
5309 FW202
F209 1A 125V
F210 1A 125V
F208 1A 125V
FW203 5301
RECTIFIER
D203
AC38.4V
C257 3300μ35
C258 3300μ35
C241
C242
R249 2.2M
Q207
AVR
R261 4.7 1/4W
R267 470 1/4W
ZD203
ZD204
ZD201
ZD202
Q208
R262 4.7 1/4W
Q209
R269 1 1/2W
IC208
REF DC VOLT
SELECTOR CD ON: 5V OTHERS: 0V
Q212
Q211
SELECTOR CD ON: 0V OTHERS: 13V
SELECTOR CD ON: 6.5V OTHERS: 0V
Q213
POWER ST-BY: 0V ON: 2.6V
POWER ST-BY: 15.8V ON: 0V
Q210
R270 1 1/2W
D204
D205
D206
D207
D210
D215
R250 4.7K
Q228
AVR
Q201
Q229
POWER ON: 12.3V OFF: 0V
POWER ON: 0V OFF: 0.6V
Q218
POWER ST-BY: 0V ON: 4.5V
Q215
SWD +5V
Q214
ZD205
Q216
AVR
Q217
R283 1 1/4W
ZD206
D208
D209
Q227
POWER ST-BY: 5.1V ON: 0V
POWER CONT.
CNP402
3/3
H
CNP407
3/3
I
BI401
3/3
J
SIGNAL LINE
GND LINE
+B LINE
-B LINE
A-311(E)(2/3)

DESTINATION		F201,202	F203	F208, 209	F210	CNP202	Ⓐ
COUNTRY	ABB.						
EUROPE ENGLAND	E T	SH1305150046	SH1305150057	NO	NO	M868M	NO
U.S.A	K	SH1125150087	SH1125150087	YES	YES	M705M	YES
GENERAL MARKET	M,X	SH1305150046	SH1165150023	YES	NO	M868M	NO

XL201	SW201	Q209	Q216	C241, 242	C295, 296
0111	NO	2SD2061E	2SD2061E	0.22	22μ50
0058	NO	2SD2061F	2SD2061	0.022	22μ35
0111	YES	2SD2061E	2SD2061E	0.22	22μ50

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Y09-3580-00

A-311

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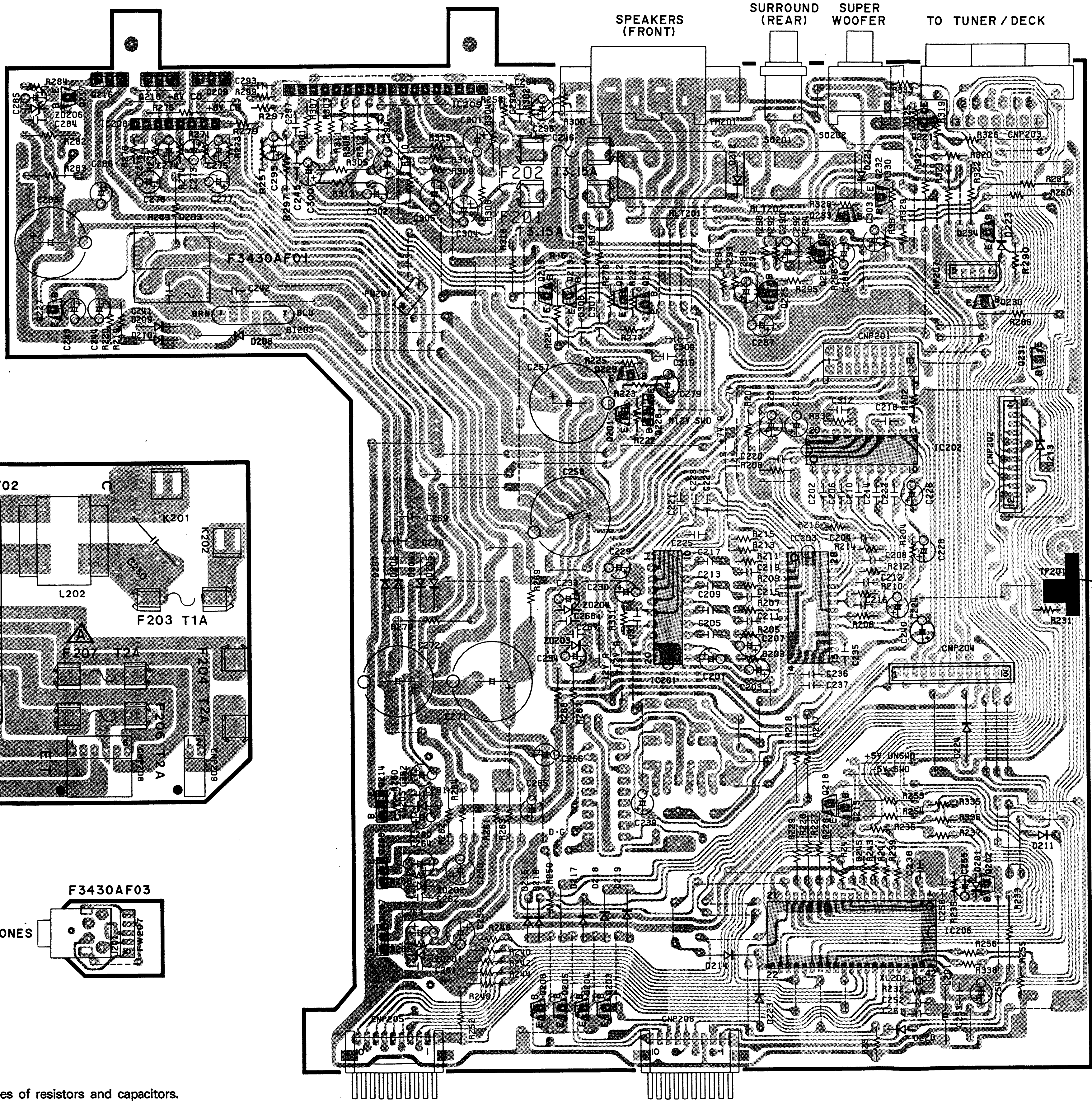
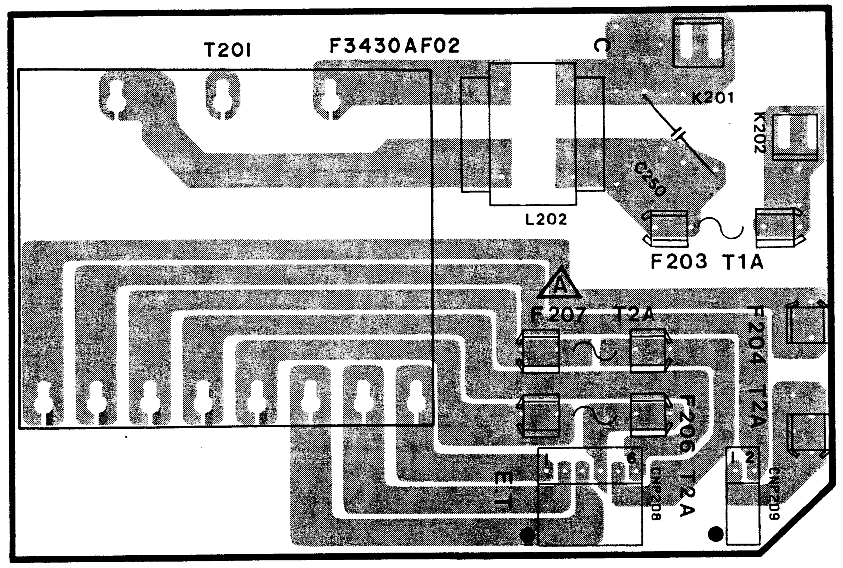
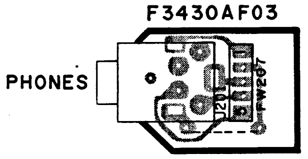
PC BOARD (COMPONENT SIDE VIEW : A-311)


SPEAKERS (FRONT)
SURROUND (REAR)
SUPER WOOFER
TO TUNER / DECK
F3430AF01
F202 T3.15A
F201 T3.15A
RLY201
RLY202
S0201
S0202
TH201
IC201
IC202
IC203
IC206
IC208
IC209
CNP201
CNP202
CNP203
CNP204
CNP205
CNP206
CNP207
BT209
XL201
TP201
+5V UNSWD
-5V SWD
BRN
BLU
C257
C258
C271
C272

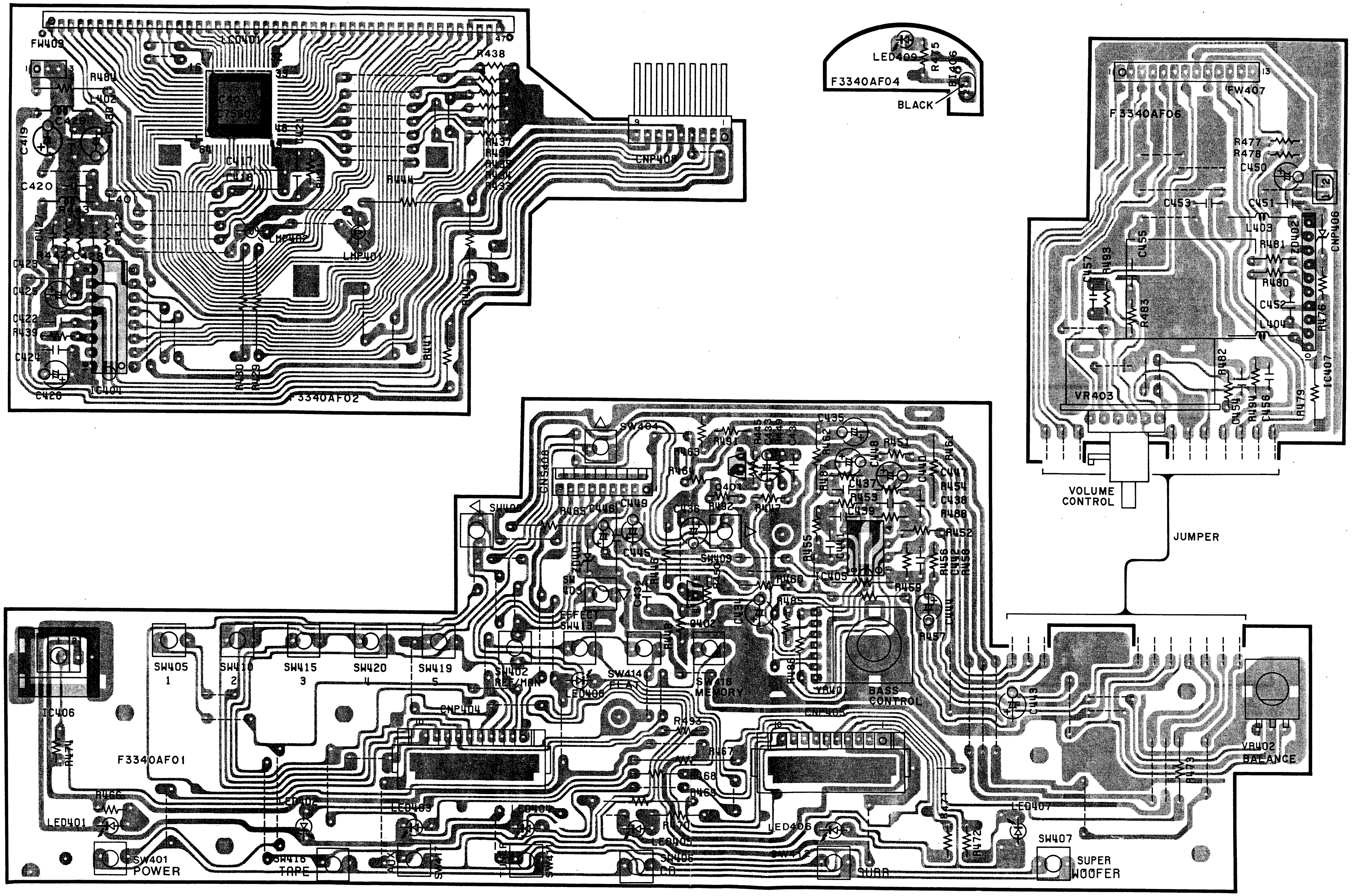
• If you want to power on A-311 without X-311/ X-311L, short-circuit TP201.


T201
F3430AF02
K201
K202
C250
L202
F203 T1A
F207 T2A
F204 T2A
F206 T2A
CNP208
CNP209

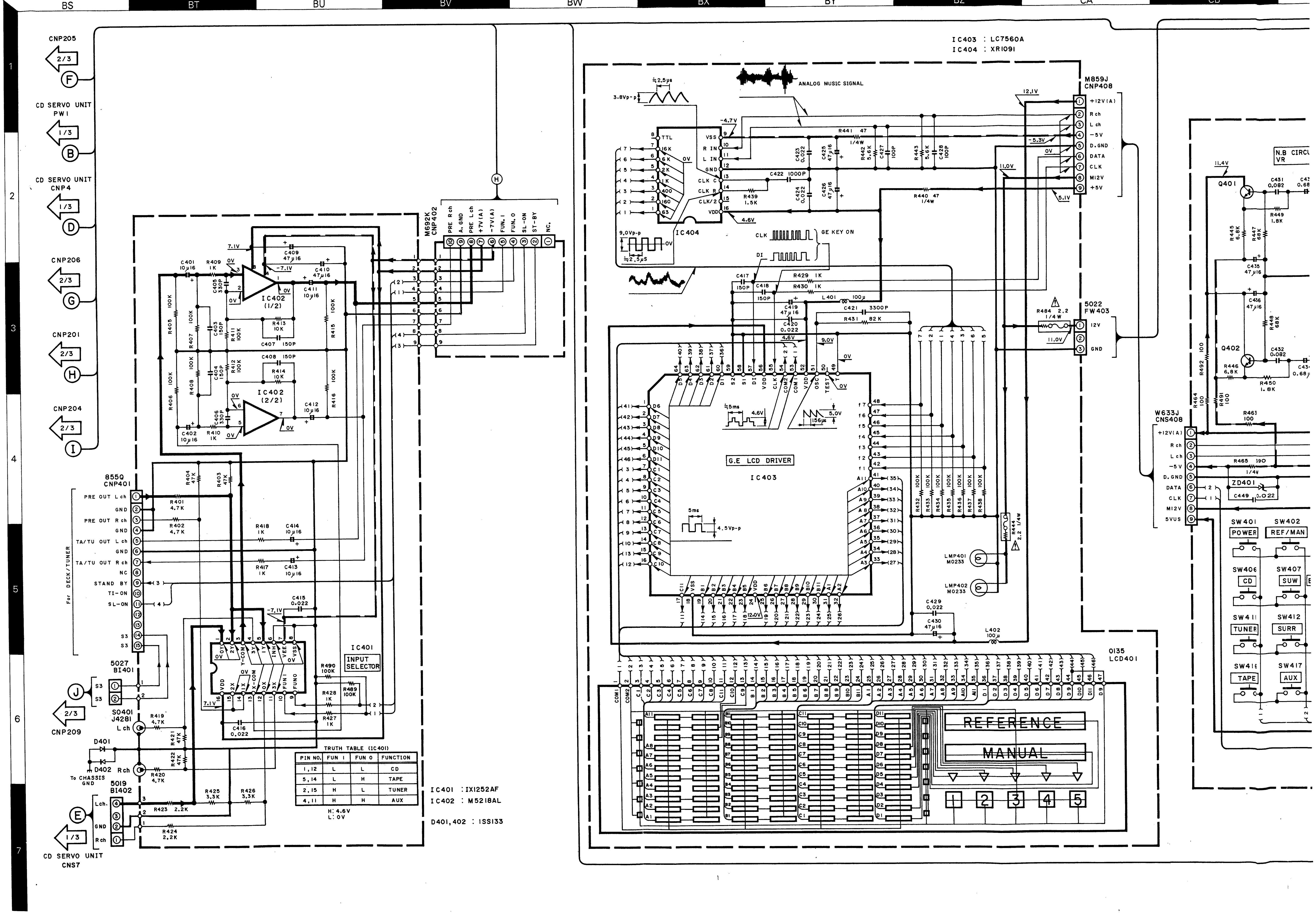

F3430AF03
PHONES

Refer to the schematic diagram for the values of resistors and capacitors.

PC BOARD (COMPONENT SIDE VIEW : A-311)


FW403
R438
LED401
IC403
C419
C420
C423
C425
C422
R439
C424
C426
IC404
CNP406
LMP401
LMP402
R444
R437
R433
R441
R440
C417
C418
R484
R443
R442
F3340AF02
LED409
R475
SW406
F3340AF04
BLACK
FW407
F3340AF06
R477
R478
C450
C453
C451
L403
ZD402
CNP408
R481
C455
C457
R493
R480
R483
C452
L404
R476
R482
VR403
C454
R494
C456
R479
IC407
VOLUME
CONTROL
JUMPER
SW404
SW408
CN5406
R455
C446
C449
C445
C435
R462
R451
C447
R454
C438
R488
R452
R461
Q401
C436
R492
R491
C437
R453
C439
R455
R456
R458
C405
R459
SW409
R460
R485
SW403
EFFECT
SW413
Q402
C434
R457
C448
R486
SW405
1
SW410
2
SW415
3
SW420
4
SW419
5
SW402
REF/MAN
LED408
SW414
FLAT
SW418
MEMORY
VR401
BASS
CONTROL
CNP405
C443
VR402
BALANCE
R473
IC406
R471
F3340AF01
CNP404
R493
R467
R468
R465
R466
LED401
LED402
LED403
LED404
R470
LED405
LED406
R474
R472
LED407
SW407
SUPER
WOOFER
SW401
POWER
SW416
TAPE
AUX
SW411
SW417
SW406
CD
SW412
SURR

Refer to the schematic diagram for the values of resistors and capacitors.


BS
BT
BU
BV
BW
BX
BY
BZ
CA
CB
1
2
3
4
5
6
7
CNP205
2/3
F
CD SERVO UNIT
PW1
1/3
B
CD SERVO UNIT
CNP4
1/3
D
CNP206
2/3
G
CNP201
2/3
H
CNP204
2/3
I
855Q
CNP401
PRE OUT L ch
GND
PRE OUT R ch
GND
TA/TU OUT L ch
GND
TA/TU OUT R ch
NC
STAND BY
TI-ON
SL-ON
S3
S3
For DECK/TUNER
5027
BI401
J
S3
S3
2/3
CNP209
S0401
J4281
L ch
R ch
D401
D402
To CHASSIS GND
5019
BI402
E
Lch.
GND
Rch
1/3
CD SERVO UNIT
CNS7
IC402 (1/2)
IC402 (2/2)
IC401
INPUT SELECTOR
M692K
CNP402
PRE R ch
A. GND
PRE L ch
+7V(A)
-7V(A)
FUN. 1
FUN. 0
SL-ON
ST-BY
NC.
IC403 : LC7560A
IC404 : XR1091
ANALOG MUSIC SIGNAL
3.8Vp-p
≒2.5μs
IC404
9.0Vp-p
GE KEY ON
CLK
DI
G.E LCD DRIVER
IC403
M859J
CNP408
+12V(A)
R ch
L ch
-5V
D.GND
DATA
CLK
M12V
+5V
5022
FW403
12V
GND
LMP401 M0233
LMP402 M0233
0135
LCD401
REFERENCE
MANUAL
1
2
3
4
5
W633J
CNS408
Q401
Q402
ZD401
N.B CIRCUIT VR
SW401 POWER
SW402 REF/MAN
SW406 CD
SW407 SUW
SW411 TUNER
SW412 SURR
SW416 TAPE
SW417 AUX

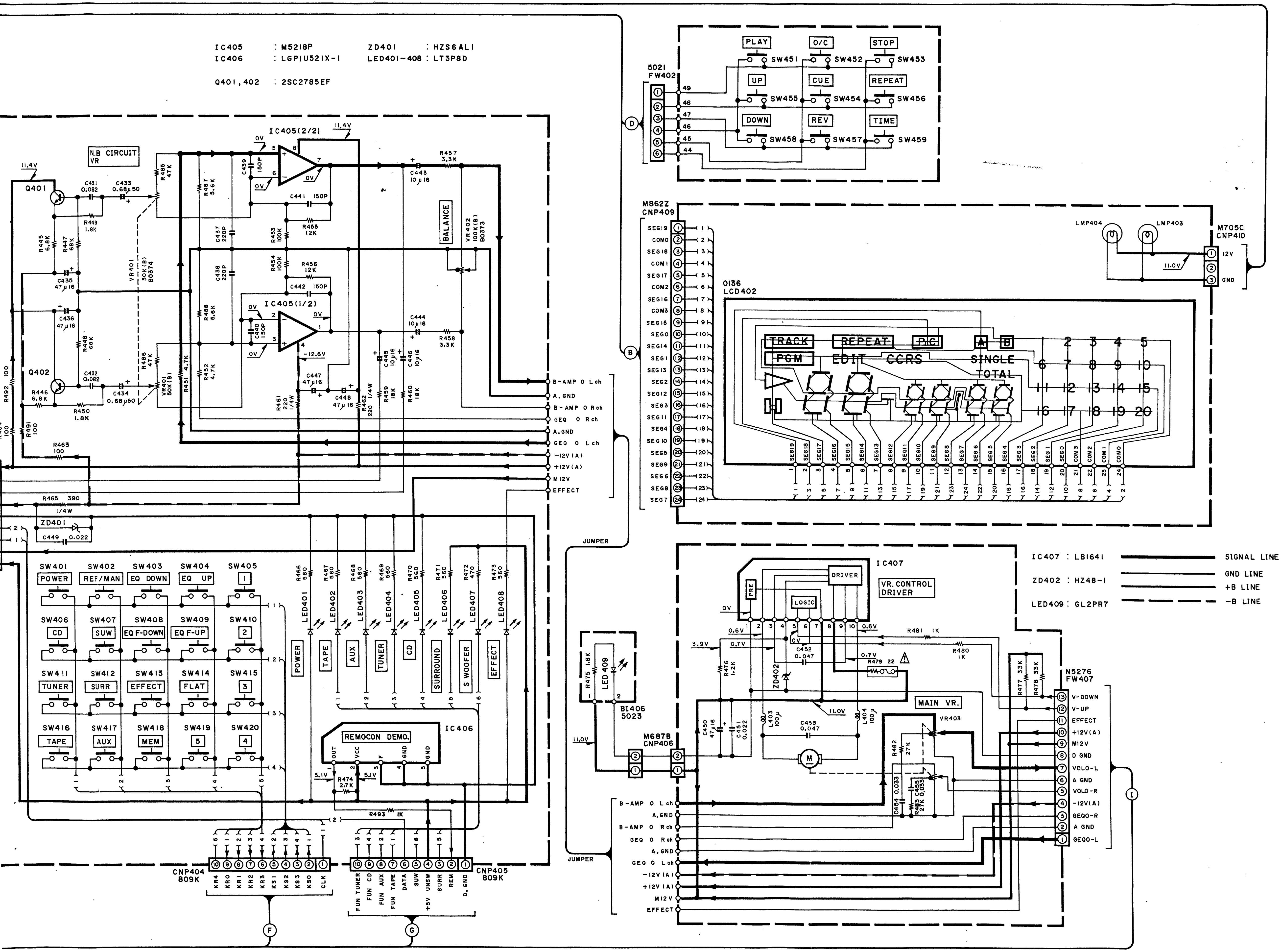
TRUTH TABLE (IC401)

PIN NO.	FUN 1	FUN 0	FUNCTION
1, 12	L	L	CD
5, 14	L	H	TAPE
2, 15	H	L	TUNER
4, 11	H	H	AUX

H: 4.6V
L: 0V

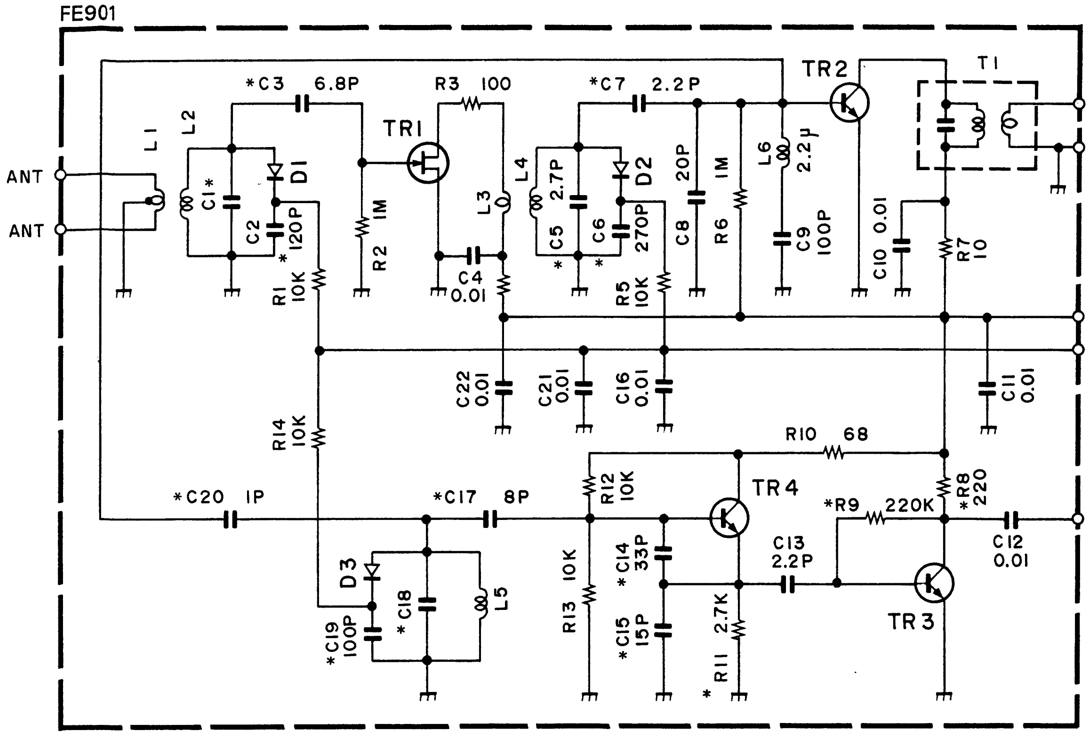
IC401 : IX1252AF
IC402 : M5218AL

D401, 402 : ISS133


IC405 : M5218P
IC406 : LGP1U521X-1
Q401, 402 : 2SC2785EF
ZD401 : HZS6AL1
LED401~408 : LT3P8D
IC407 : LB1641
ZD402 : HZ4B-1
LED409 : GL2PR7
SIGNAL LINE
GND LINE
+B LINE
-B LINE
IC405(2/2)
IC405(1/2)
N.B CIRCUIT VR
BALANCE
VR401 50K(B) B0374
VR402 100K(B) B0373
Q401
Q402
ZD401
5021 FW402
PLAY
O/C
STOP
UP
CUE
REPEAT
DOWN
REV
TIME
SW451
SW452
SW453
SW455
SW454
SW456
SW458
SW457
SW459
M862Z CNP409
0136 LCD402
TRACK
REPEAT
P.C
A
B
PGM
EDIT
CCRS
SINGLE
TOTAL
LMP404
LMP403
M705C CNP410
12V
GND
11.0V
B-AMP O Lch
A.GND
B-AMP O Rch
GEQ O Rch
GEQ O Lch
-12V(A)
+12V(A)
M12V
EFFECT
JUMPER
SW401 POWER
SW402 REF/MAN
SW403 EQ DOWN
SW404 EQ UP
SW405 1
SW406 CD
SW407 SUW
SW408 EQ F-DOWN
SW409 EQ F-UP
SW410 2
SW411 TUNER
SW412 SURR
SW413 EFFECT
SW414 FLAT
SW415 3
SW416 TAPE
SW417 AUX
SW418 MEM
SW419 5
SW420 4
LED401 POWER
LED402 TAPE
LED403 AUX
LED404 TUNER
LED405 CD
LED406 SURROUND
LED407 S WOOFER
LED408 EFFECT
REMOCON DEMO.
IC406
CNP404 809K
KR4 KR0 KR1 KR2 KR3 KS1 KS2 KS3 KS0 CLK
CNP405 809K
FUN TUNER FUN CD FUN AUX FUN TAPE DATA SUW +5V UNSW SURR REM D.GND
IC407
DRIVER
PRE
LOGIC
VR.CONTROL DRIVER
MAIN VR.
VR403
M
B1406 5023
LED409
M687B CNP406
N5276 FW407
V-DOWN
V-UP
EFFECT
+12V(A)
M12V
D GND
VOLO-L
A GND
VOLO-R
-12V(A)
GEQO-R
A GND
GEQO-L

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.


FE901
ANT
ANT
L1
L2
C1*
C2 120P
D1
*C3 6.8P
R3 100
TR1
R1 10K
R2 1M
L3
C4 0.01
L4
C5 2.7P
C6 270P
D2
*C7 2.2P
R5 10K
C8 20P
R6 1M
L6 2.2μ
C9 100P
TR2
T1
C10 0.01
R7 10
IF OUT
GND
VCC
VT
C22 0.01
C21 0.01
C16 0.01
C11 0.01
R14 10K
R10 68
*C20 1P
*C17 8P
R12 10K
TR4
*R9 220K
*R8 220
F OUT
C12 0.01
D3
*C18
L5
*C19 100P
R13 10K
*C14 33P
*C15 15P
C13 2.2P
*R11 2.7K
TR3

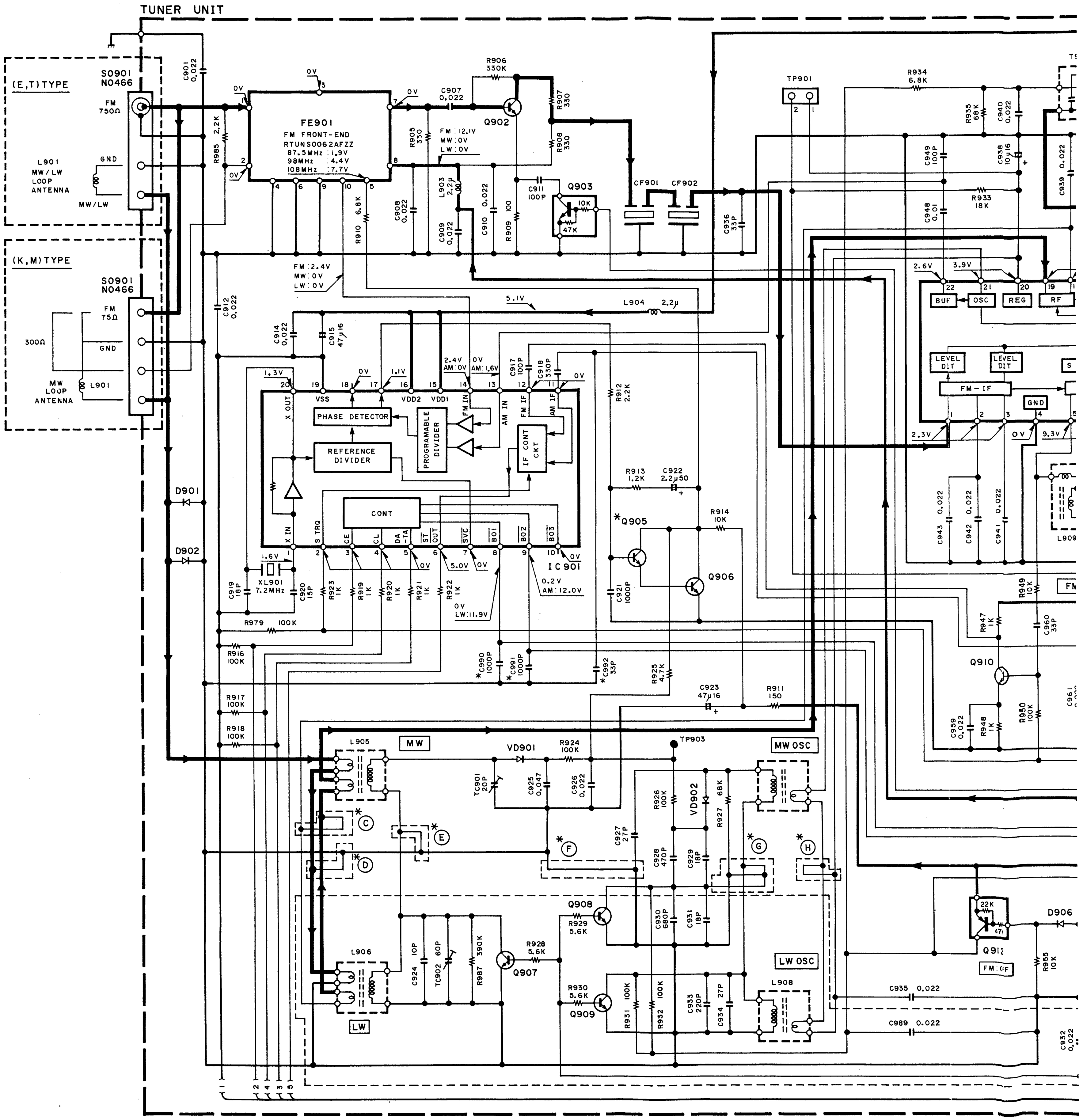
TR1 : 2SK439 or 2SK241

TR2,3 : 2SC3391

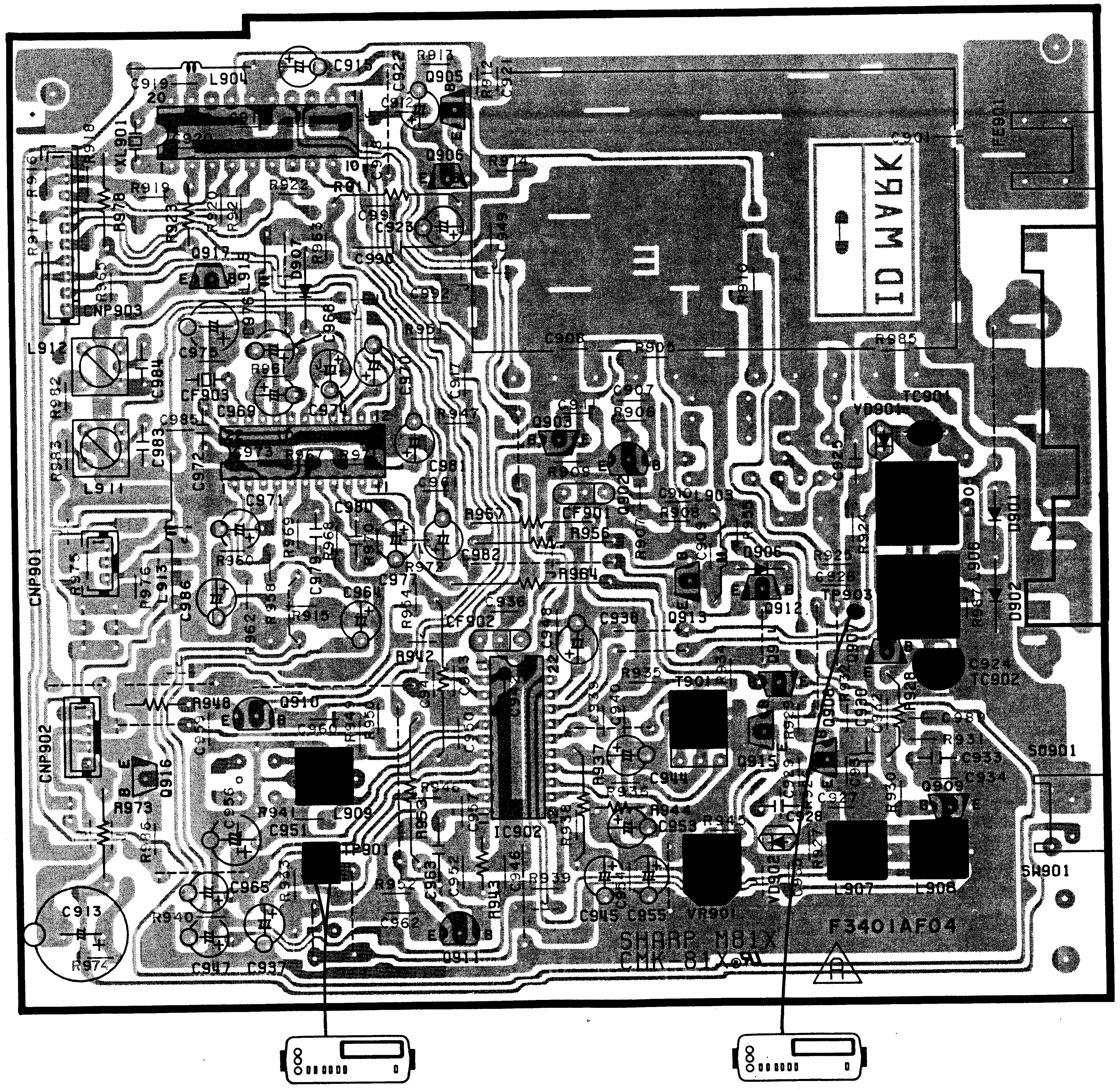
TR4 : 2SC3494

D1~3 : AN12K-00

✻Adjusted value.

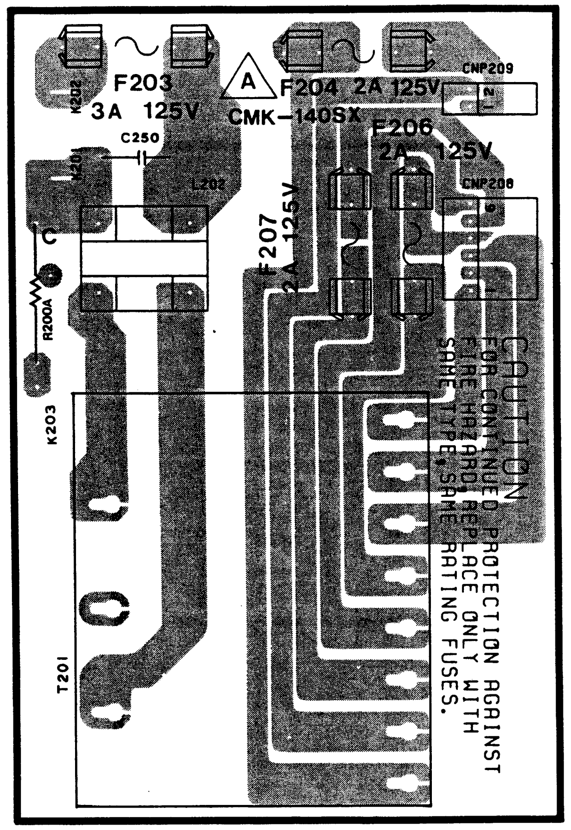

TUNER UNIT
(E,T) TYPE
S0901 N0466
FM 75Ω
GND
L901 MW/LW LOOP ANTENNA
MW/LW
(K,M) TYPE
FM 75Ω
300Ω
MW LOOP ANTENNA
FE901
FM FRONT-END
RTUNS0062AFZZ
87.5MHz : 1.9V
98MHz : 4.4V
108MHz : 7.7V
Q902
Q903
CF901
CF902
TP901
IC901
PHASE DETECTOR
REFERENCE DIVIDER
PROGRAMABLE DIVIDER
IF CONT CKT
CONT
XL901 7.2MHz
D901
D902
Q905
Q906
L904 2.2μ
5.1V
BUF
OSC
REG
RF
LEVEL DIT
FM-IF
GND
L909
Q910
L905
MW
VD901
TP903
MW OSC
VD902
Q908
Q907
L906
LW
Q909
LW OSC
L908
Q912
D906
FM : 0F

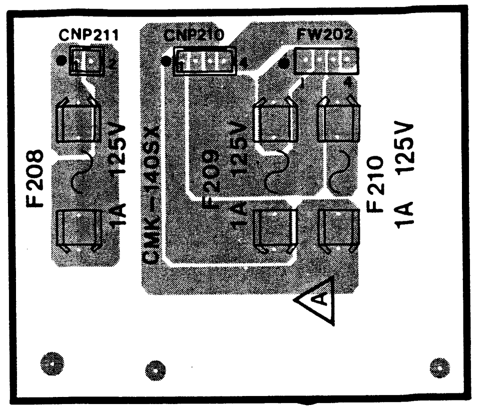
PC BOARD (COMPONENT SIDE VIEW : X-311)

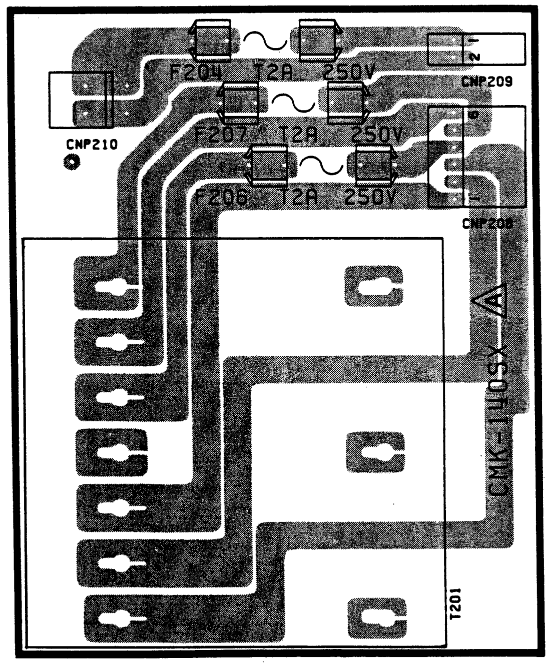

ID MARK
ANTENNA
SHARP M81X
CMK-81X
F3401AF04
IC901
IC902
TC901
TC902
T901
VR901
CNP901
CNP902
CNP903
SW901
SO901
C913
R974
L904
L911
L912
L913
L907
L908
CF901
CF902
CF903
TP901
TP903
XL901

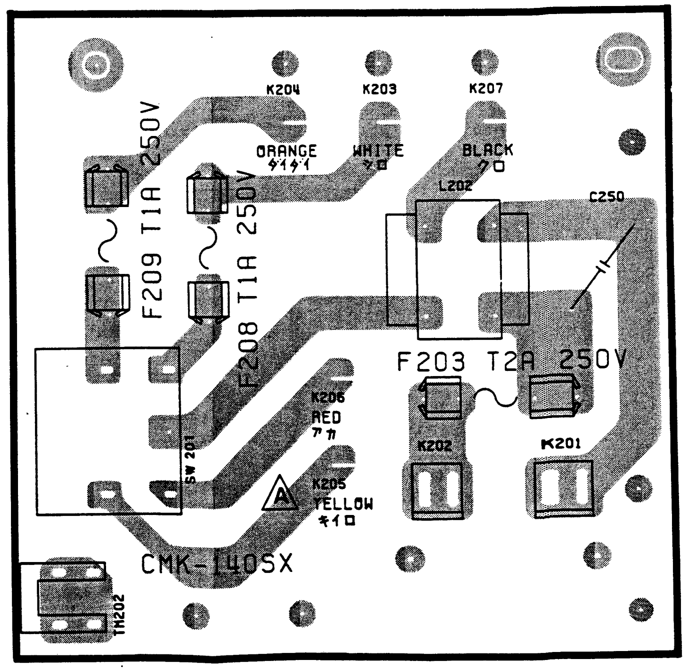
DC voltmeter
(b) Discriminator : 0V

DC voltmeter
(a) Band edge (1) : 1.1V ± 0.1V
(a) Band edge (2) : Confirm 7.4V ± 0.8V


F203
3A 125V
F204 2A 125V
CMK-140SX
F206
2A 125V
F207
2A 125V
CNP209
CNP208
C250
L207
R200A
K203
T201
CAUTION
FOR CONTINUED PROTECTION AGAINST
FIRE HAZARD REPLACE ONLY WITH
SAME TYPE & SAME RATING FUSES.

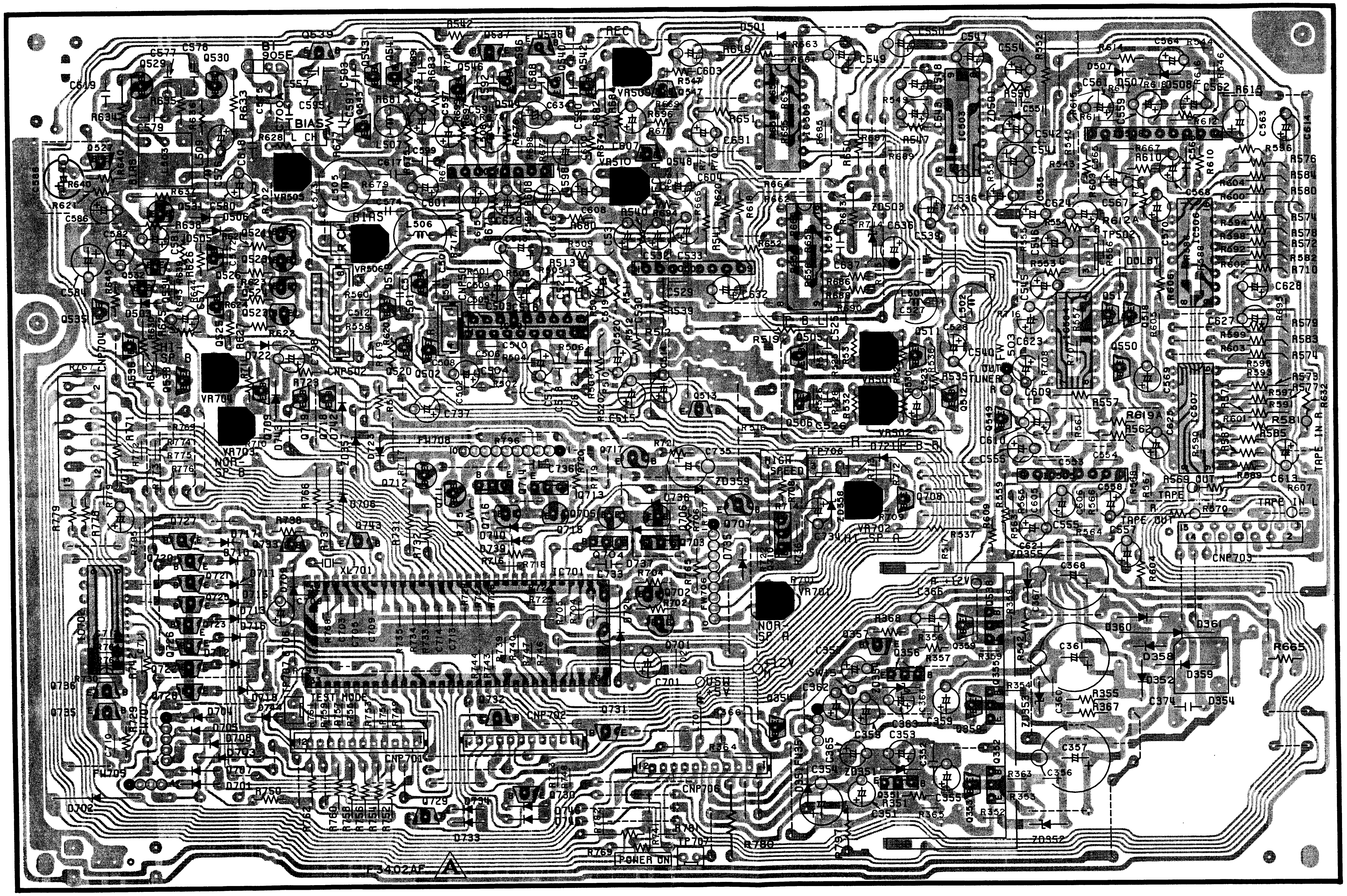

CNP211
CNP210
FW202
F208
1A 125V
F209
1A 125V
CMK-140SX
F210
1A 125V


F204 T2A 250V
F207 T2A 250V
F206 T2A 250V
CNP209
CNP210
CNP208
CMK-140SX
T201

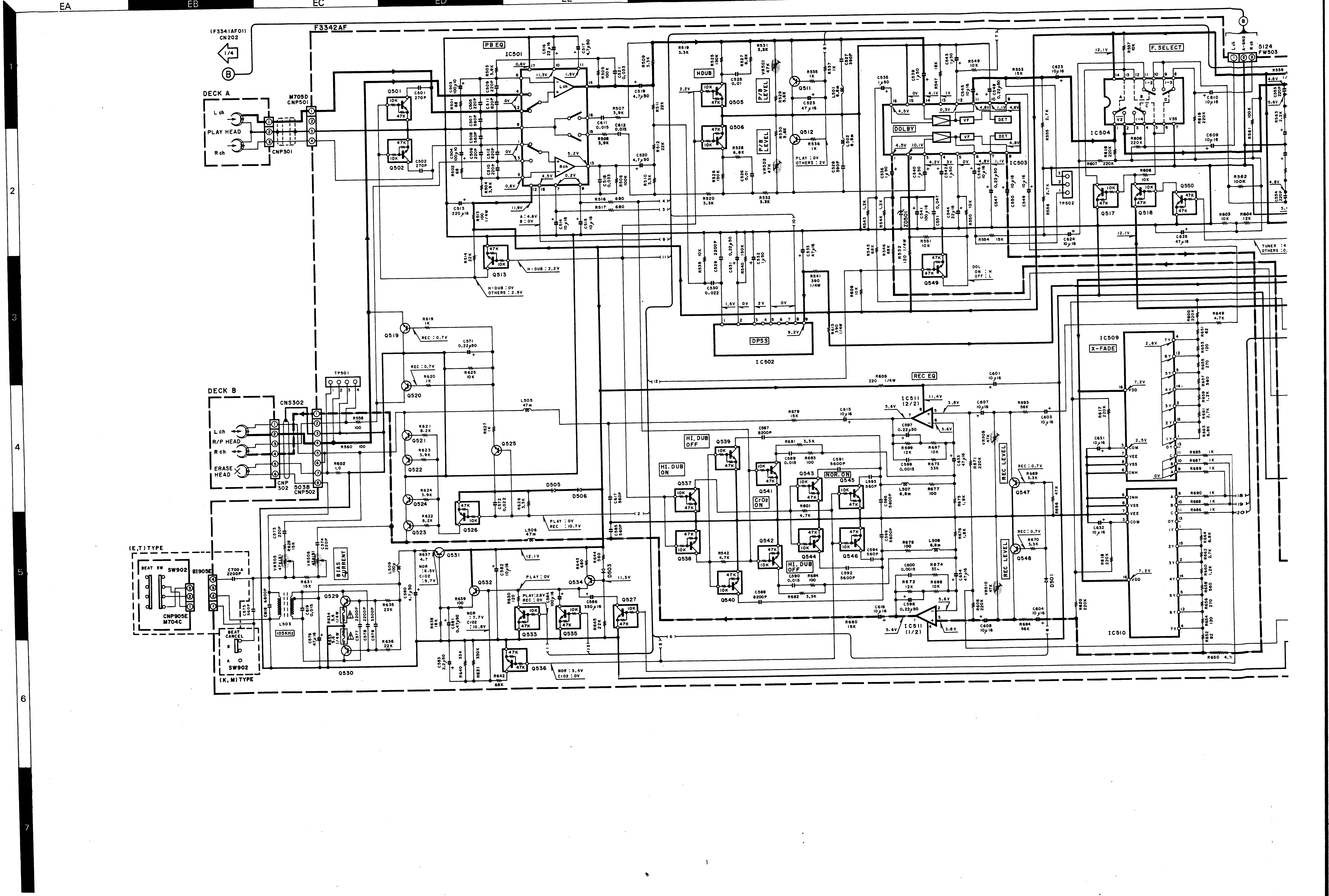

K204
K203
K207
ORANGE
WHITE
BLACK
L202
C250
F209 T1A 250V
F208 T1A 250V
F203 T2A 250V
K206
RED
K205
YELLOW
K202
K201
SW201
TH202
CMK-140SX

Refer to the schematic diagram for the values of resistors and capacitors.

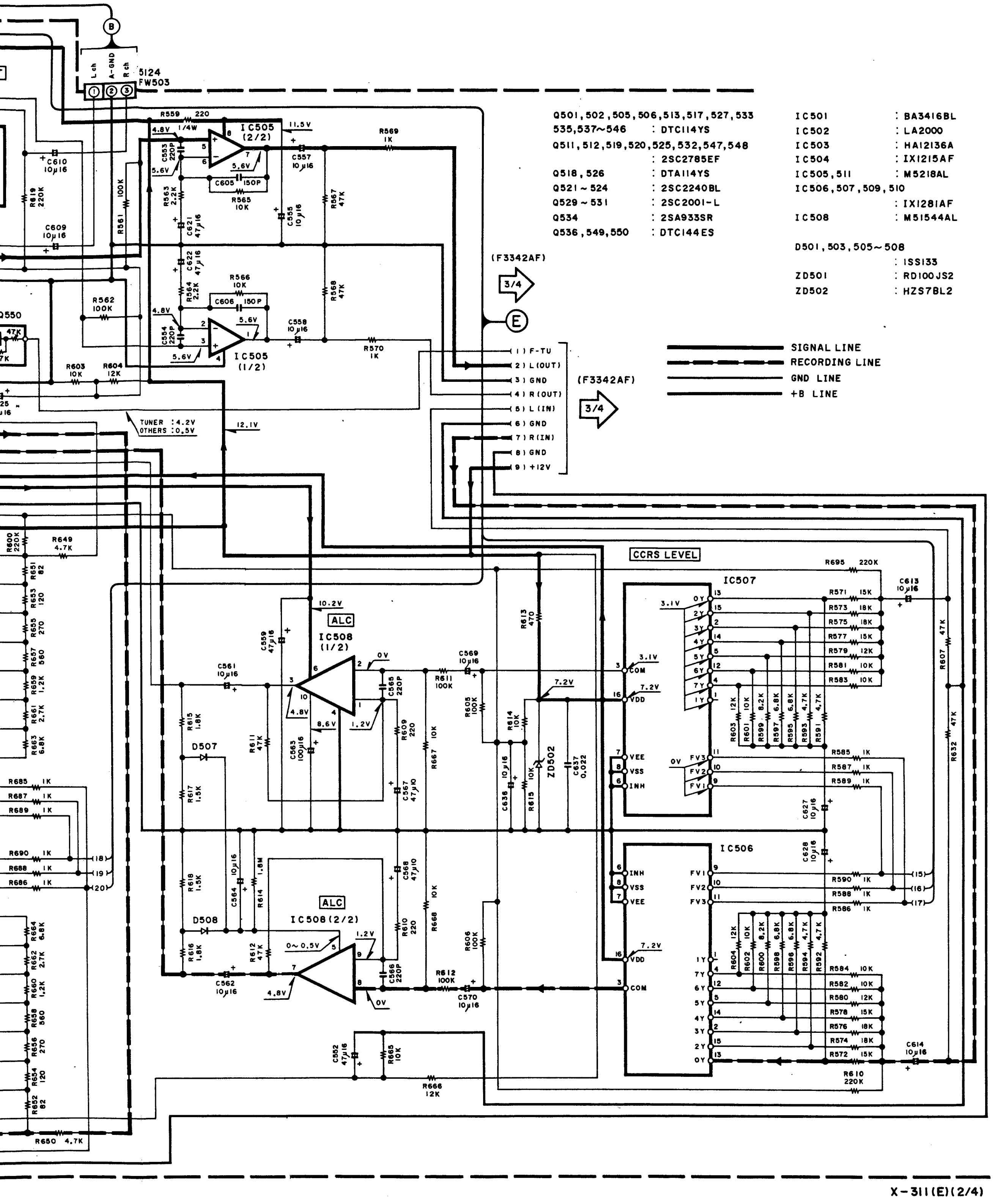
PC BOARD (COMPONENT SIDE VIEW : X-311)


REC
BIAS
L CH
R CH
DOLBY
TUNER
TAPE OUT
TAPE IN L
TAPE IN R
HIGH SPEED
NOR-SP A
NOR-SP B
TEST MODE
POWER ON
CNP701
CNP702
CNP703
CNP704
CNP705
IC701
XL701
VR701
VR702
VR703
VR704
TP701
TP706
F3402AF

Refer to the schematic diagram for the values of resistors and capacitors.



EA
EB
EC
ED
EE
1
2
3
4
5
6
7
(F3341AF01)
CN202
1/4
B
F3342AF
DECK A
L ch
PLAY HEAD
R ch
CNP301
M705D
CNP501
PB EQ
IC501
Q501
Q502
HDUB
Q505
Q506
Q511
Q512
P/B LEVEL
VR501
VR502
PLAY : 0V
OTHERS : 2V
DOLBY
VF
DET
IC503
ZD501
TP502
Q549
DOL ON : H OFF : L
F. SELECT
IC504
Q517
Q518
Q550
5124
FW503
L ch
A-GND
R ch
TUNER
OTHERS
Q513
H-DUB : 2.2V
H-DUB : 0V
OTHERS : 2.9V
A : 4.6V
B : 0V
DPSS
IC502
Q519
REC : 0.7V
Q520
TP501
DECK B
CNS302
L ch
R/P HEAD
R ch
ERASE HEAD
CNP 302
5038
CNP502
Q521
Q522
Q524
Q523
Q525
Q526
D505
D506
PLAY : 0V
REC : 10.7V
L505
L506
REC EQ
IC511 (2/2)
IC511 (1/2)
HI. DUB OFF
HI. DUB ON
Q537
Q538
Q539
Q540
Q541
Q542
Q543
Q544
Q545
Q546
CrO2 ON
NOR. ON
HI. DUB OFF
REC LEVEL
VR509
VR510
Q547
Q548
D501
IC509
X-FADE
IC510
(E,T) TYPE
BEAT SW
SW902
CNP905E
M704C
B1905E
BEAT CANCEL
SW902
(K, M) TYPE
BIAS CURRENT
VR505
VR506
L503
105KHz
Q529
Q530
Q531
Q532
Q533
Q534
Q535
Q536
Q527
D503
NOR : 6.5V
CrO2 : 9.7V
NOR : 7.7V
CrO2 : 10.8V
NOR : 3.4V
CrO2 : 0V
PLAY : 2.8V
REC : 0V
12.1V
11.3V


5124
FW503
Lch
A-GND
Rch
IC505 (2/2)
IC505 (1/2)
IC506
IC507
IC508 (1/2)
IC508(2/2)
ALC
CCRS LEVEL
(F3342AF)
3/4
(1) F-TU
(2) L(OUT)
(3) GND
(4) R(OUT)
(5) L(IN)
(6) GND
(7) R(IN)
(8) GND
(9) +12V
TUNER :4.2V
OTHERS :0.5V
12.1V
D507
D508
ZD502
X-311(E)(2/4)

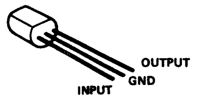
Q501,502,505,506,513,517,527,533
535,537~546 : DTC114YS
Q511,512,519,520,525,532,547,548
: 2SC2785EF
Q518,526 : DTA114YS
Q521~524 : 2SC2240BL
Q529~531 : 2SC2001-L
Q534 : 2SA933SR
Q536,549,550 : DTC144ES

IC501 : BA3416BL
IC502 : LA2000
IC503 : HA12136A
IC504 : IX1215AF
IC505,511 : M5218AL
IC506,507,509,510
: IX1281AF
IC508 : M51544AL

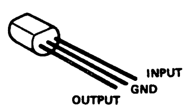
D501,503,505~508
: 1SS133
ZD501 : RD100JS2
ZD502 : HZS7BL2

▬▬▬	SIGNAL LINE
▬ ▬ ▬	RECORDING LINE
───	GND LINE
━━━	+B LINE

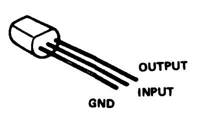
M51951ASL


OUTPUT
GND
INPUT

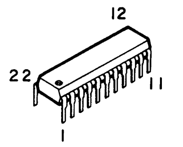
NJM78L05A


INPUT
GND
OUTPUT

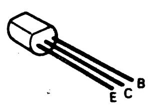
NJM79L05A


OUTPUT
INPUT
GND

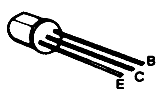
LA1265
LA3401



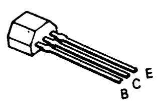
2SC2001-L
2SC2878B



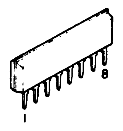
2SA562-Y



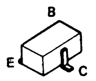
DTA114ES DTA114YS
DTC144ES 2SC1740S
2SC2603-G



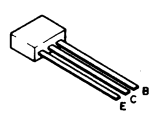
M5230L



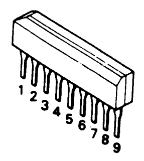
DTA114EK
DTC114YK



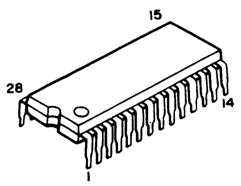
DTC114YS



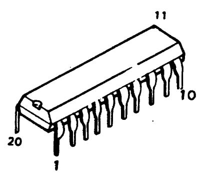
LA2000



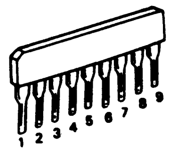
LC7522



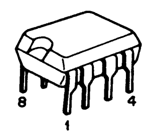
LM7000



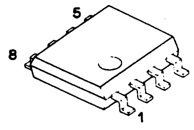
M5218AL



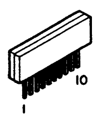
M5218P



NJM4560M



LB1641
M51544AL



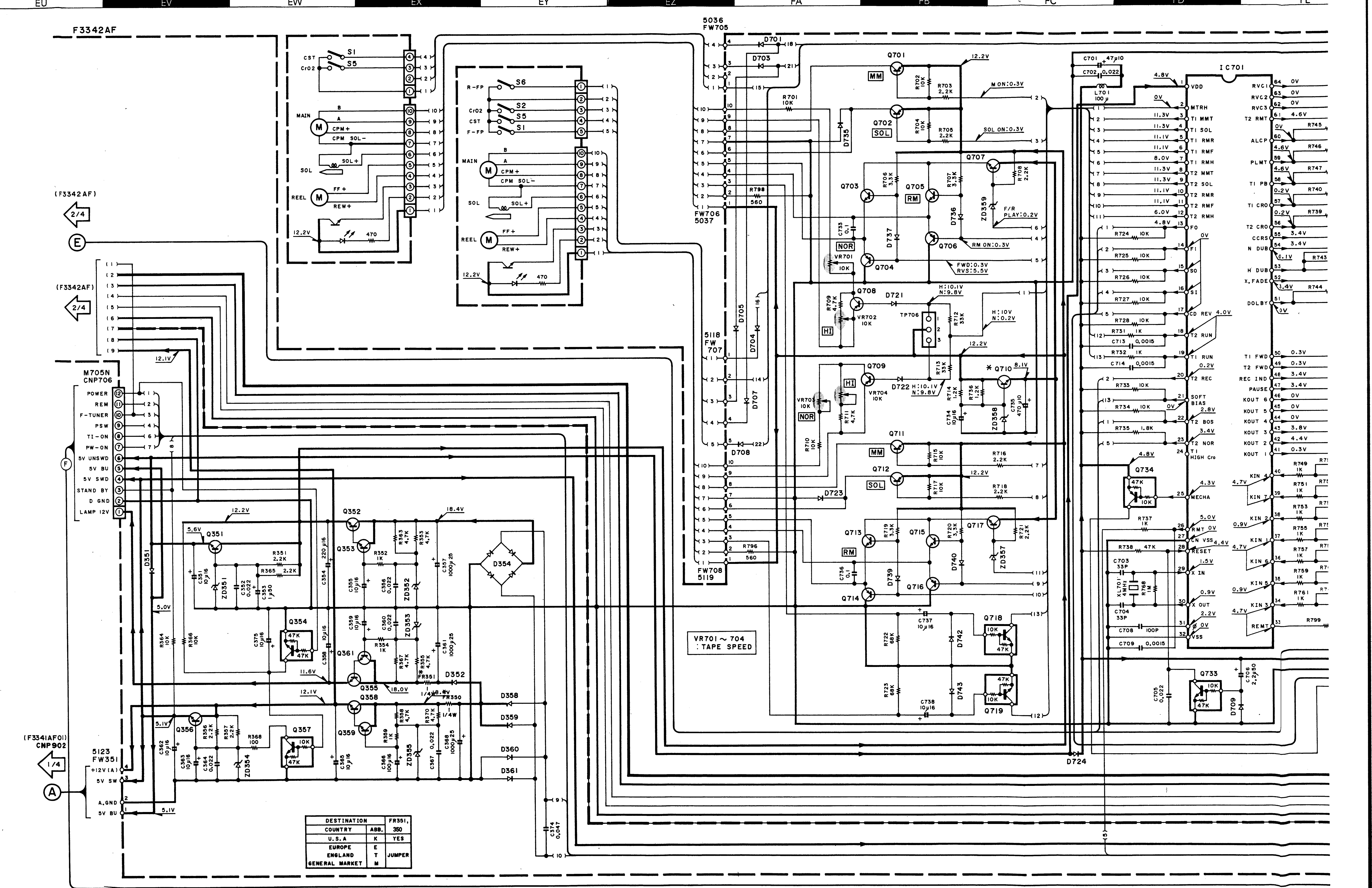
- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

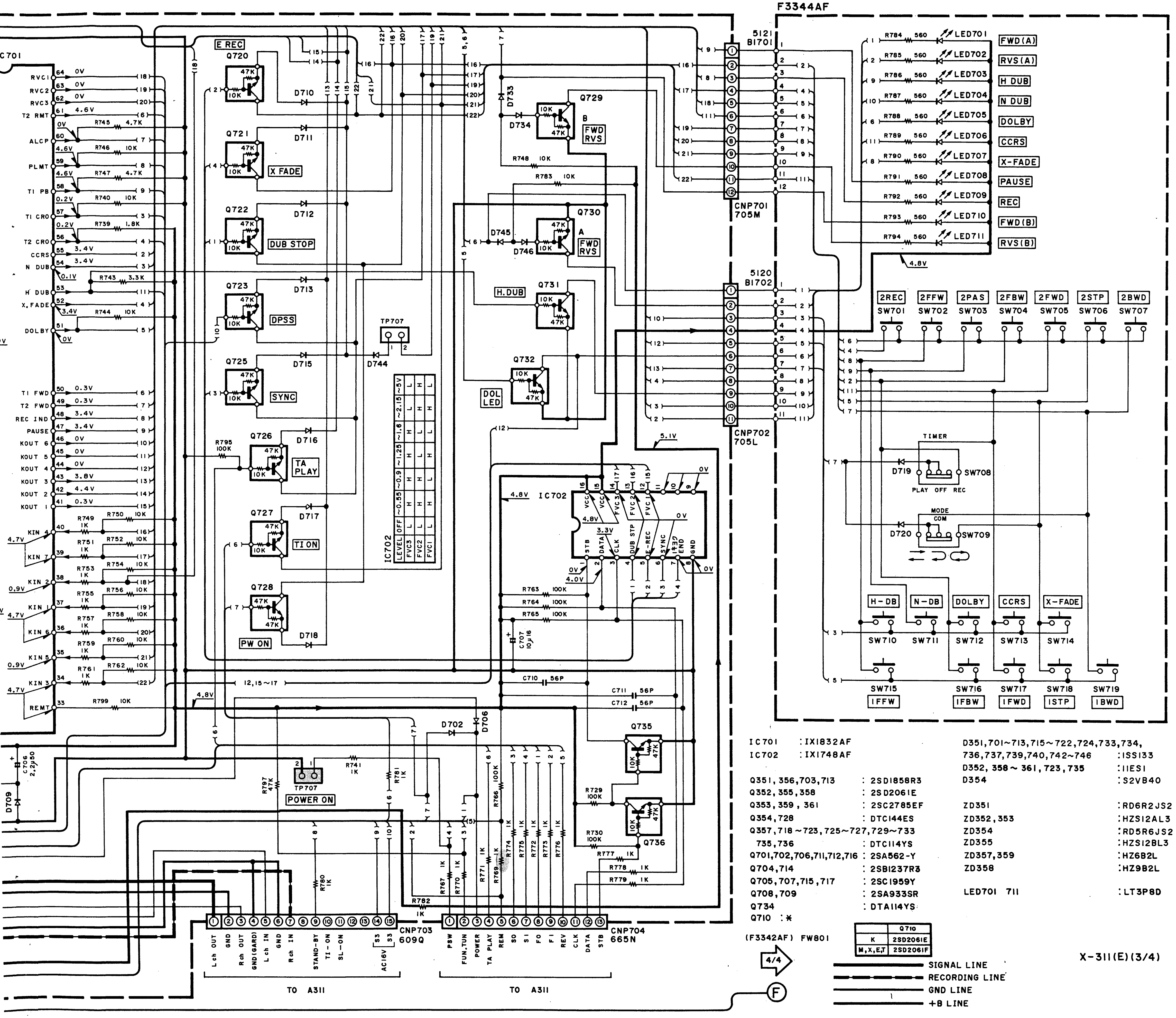
X-311/L

Y09-3580-00

KENWOOD


EU
EV
EW
EX
EY
EZ
FA
FB
FC
FD
FE
1
2
3
4
5
6
7
F3342AF
(F3342AF)
2/4
E
(F3342AF)
2/4
M705N
CNP706
POWER
REM
F-TUNER
PSW
TI-ON
PW-ON
5V UNSWD
5V BU
5V SWD
STAND BY
D GND
LAMP 12V
F
(F3341AF01)
CNP902
1/4
A
5123
FW351
+12V (A)
5V SW
A.GND
5V BU
5.1V
5.0V
12.1V
CST
CrO2
S1
S5
MAIN
B
A
CPM+
CPM SOL-
SOL+
SOL
REEL
FF+
REW+
12.2V
470
R-FP
S6
S2
S5
S1
F-FP
5036
FW705
D701
D703
FW706
5037
5118
FW
707
D705
D704
D707
D708
FW708
5119
R798
560
R796
560
R701
10K
D735
Q701
MM
R702
10K
R703
2.2K
12.2V
M ON:0.3V
Q702
SOL
R704
10K
R705
2.2K
SOL ON:0.3V
Q703
R706
3.3K
Q705
RM
R707
3.3K
Q707
R708
2.2K
ZD359
F/R
PLAY:0.2V
C733
0.1
NOR
VR701
10K
D737
D736
Q706
RM ON:0.3V
Q704
FWD:0.3V
RVS:5.5V
Q708
D721
H:10.1V
N:9.8V
R709
4.7K
VR702
10K
HI
TP706
R712
33K
H:10V
N:0.2V
Q709
D722
H:10.1V
N:9.8V
VR704
10K
VR703
NOR
HI
R711
4.7K
R710
10K
R713
33K
*Q710
8.1V
R714
1.2K
R736
1.2K
C734
10μ16
ZD358
C735
470μ10
Q711
MM
R715
10K
R716
2.2K
Q712
SOL
R717
10K
12.2V
R718
2.2K
D723
Q713
RM
R719
3.3K
Q715
R720
3.3K
Q717
R721
2.2K
ZD357
C736
0.1
D739
D740
Q716
Q714
C737
10μ16
Q718
10K
47K
R722
68K
D742
R723
68K
D743
C738
10μ16
Q719
47K
10K
D724
VR701 ~ 704
: TAPE SPEED
C701 47μ10
C702 0.022
L701
100μ
IC701
4.8V
VDD
0V
MTRH
11.3V
T1 MMT
T1 SOL
11.1V
T1 RMR
T1 RMF
8.0V
T1 RMH
T2 MMT
T2 SOL
T2 RMR
T2 RMF
6.0V
T2 RMH
FO
R724 10K
F1
R725 10K
SO
R726 10K
SI
R727 10K
CD REV
4.0V
R728 10K
R731 1K
T2 RUN
C713 0.0015
R732 1K
T1 RUN
C714 0.0015
0.2V
T2 REC
R733 10K
SOFT
BIAS
R734 10K
2.8V
T2 BOS
R735 1.8K
3.4V
T2 NOR
T1
HIGH Cro
Q734
4.8V
47K
10K
4.3V
MECHA
R737
1K
5.0V
RMT
CN VSS
4.4V
R738 47K
RESET
C703
33P
XL701
4MHz
R768
1M
1.5V
X IN
C704
33P
0.9V
X OUT
2.2V
C708 100P
Ø
C709 0.0015
VSS
C705
0.022
Q733
10K
47K
C706
2.2μ50
D709
RVC1
RVC2
RVC3
T2 RMT
ALCP
PLMT
T1 PB
T1 CRO
T2 CRO
CCRS
N DUB
H DUB
X.FADE
DOLBY
T1 FWD
T2 FWD
REC IND
PAUSE
KOUT 6
KOUT 5
KOUT 4
KOUT 3
KOUT 2
KOUT 1
KIN 4
KIN 7
KIN 2
KIN 1
KIN 6
KIN 5
KIN 3
REMT
4.6V
0.2V
3.4V
0.1V
0.3V
3.8V
4.4V
4.7V
0.9V
R745
R746
R747
R740
R739
R743
R744
R749 1K
R751 1K
R753 1K
R755 1K
R757 1K
R759 1K
R761 1K
R799
Q351
5.6V
12.2V
R351 2.2K
R365 2.2K
C351 10μ16
ZD351
C352 0.022
C353 1μ50
Q352
Q353
18.4V
R363 4.7K
R353 4.7K
R352 1K
C354 220μ16
C355 10μ16
C356 0.022
ZD352
C357 1000μ25
D354
R364 10K
R356 10K
C375 10μ16
Q354
47K
Q361
C359 10μ16
C360 0.022
ZD353
R354 1K
R367 4.7K
R355 4.7K
C361 1000μ25
C358 10μ16
11.6V
*FR351
D352
Q355
18.0V
12.1V
Q358
1/4W
FR350
D358
D359
D360
D361
Q356
5.1V
R356 2.2K
R357 2.2K
R368 100
Q357
10K
47K
C362 10μ16
C363 10μ16
C364 0.022
ZD354
Q359
C365 10μ16
R358 4.7K
R359 1K
R370 4.7K
C366 100μ16
ZD355
C367 0.022
C368 1000μ25
C374 0.047
D351

DESTINATION		FR351, 350
COUNTRY	ABB.	
U.S.A	K	YES
EUROPE	E	JUMPER
ENGLAND	T	
GENERAL MARKET	M	


F3344AF
IC701
IC702
E REC
X FADE
DUB STOP
DPSS
SYNC
TA PLAY
TI ON
PW ON
FWD RVS
H.DUB
DOL LED
TP707
POWER ON
CNP701 705M
CNP702 705L
5121 B1701
5120 B1702
LED701 FWD(A)
LED702 RVS(A)
LED703 H DUB
LED704 N DUB
LED705 DOLBY
LED706 CCRS
LED707 X-FADE
LED708 PAUSE
LED709 REC
LED710 FWD(B)
LED711 RVS(B)
SW701 2REC
SW702 2FFW
SW703 2PAS
SW704 2FBW
SW705 2FWD
SW706 2STP
SW707 2BWD
TIMER
SW708 PLAY OFF REC
MODE COM
SW709
SW710 H-DB
SW711 N-DB
SW712 DOLBY
SW713 CCRS
SW714 X-FADE
SW715 IFFW
SW716 IFBW
SW717 IFWD
SW718 ISTP
SW719 IBWD
CNP703 609Q
CNP704 665N
Lch OUT, GND, Rch OUT, GND(GARD), Lch IN, GND, Rch IN, STAND-BY, TI-ON, SL-ON, S3, AC16V
PSW, FUN.TUN, POWER, TA PLAY, REM, SO, SI, FO, FI, REV, CLK, DATA, STB
TO A311
TO A311
(F3342AF) FW801
4/4
F

IC701 :IX1832AF
IC702 :IX1748AF

Q351, 356,703,713 : 2SD1858R3
Q352, 355, 358 : 2SD2061E
Q353, 359 , 361 : 2SC2785EF
Q354, 728 : DTC144ES
Q357, 718 ~723, 725~727, 729~733
735, 736 : DTC114YS
Q701,702,706,711,712,716 : 2SA562-Y
Q704,714 : 2SB1237R3
Q705, 707, 715, 717 : 2SC1959Y
Q708, 709 : 2SA933SR
Q734 : DTA114YS
Q710 :*

	Q710
K	2SD2061E
M,X,E,T	2SD2061F

D351,701~713,715~722,724,733,734,
736,737,739,740,742~746 :1SS133
D352, 358 ~ 361, 723, 735 :11ES1
D354 :S2VB40

ZD351 :RD6R2JS2
ZD352, 353 :HZS12AL3
ZD354 :RD5R6JS2
ZD355 :HZS12BL3
ZD357, 359 :HZ6B2L
ZD358 :HZ9B2L

LED701 711 :LT3P8D

SIGNAL LINE
RECORDING LINE
GND LINE
+B LINE

X-311(E)(3/4)

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

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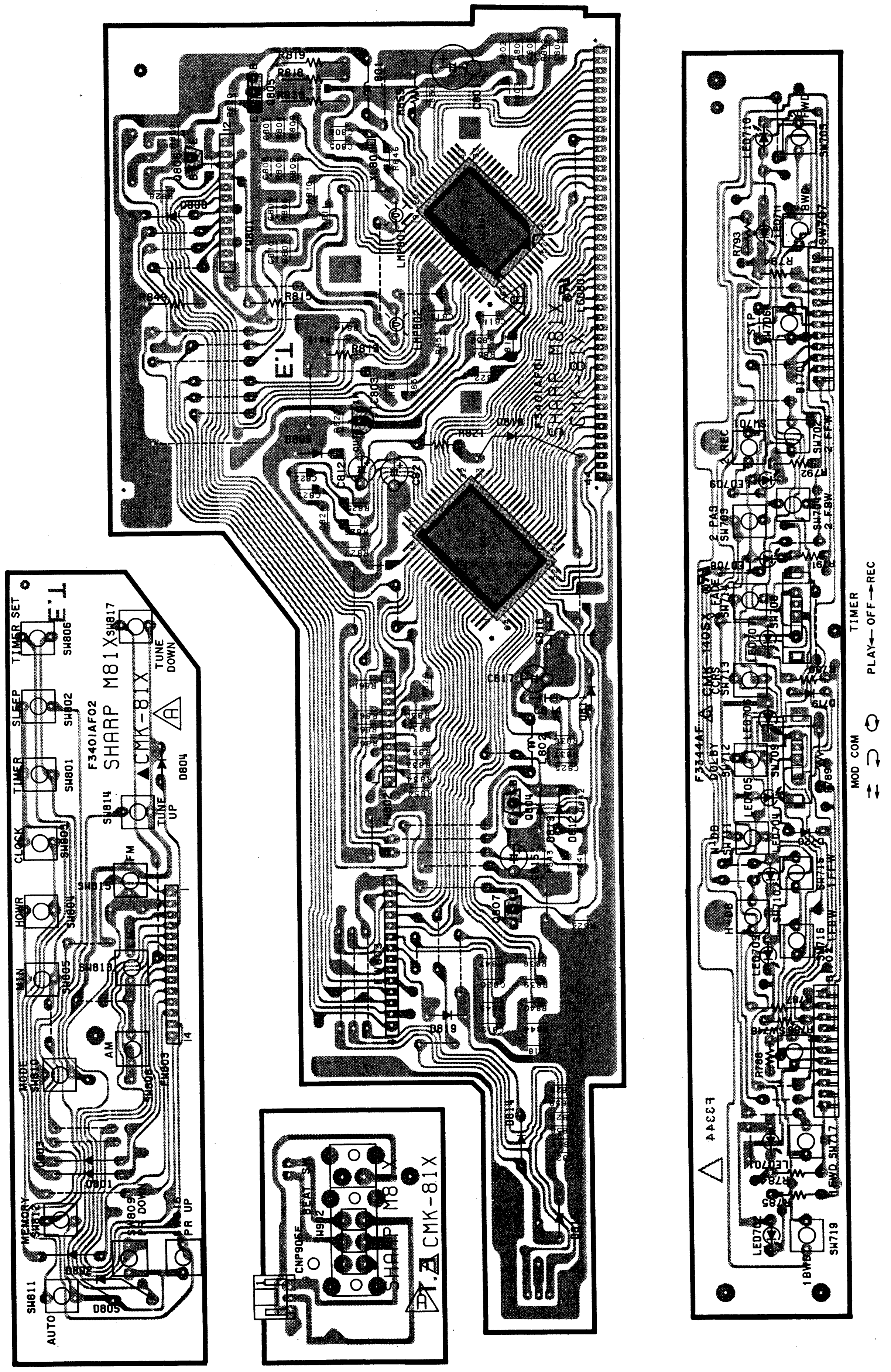
X-311/L

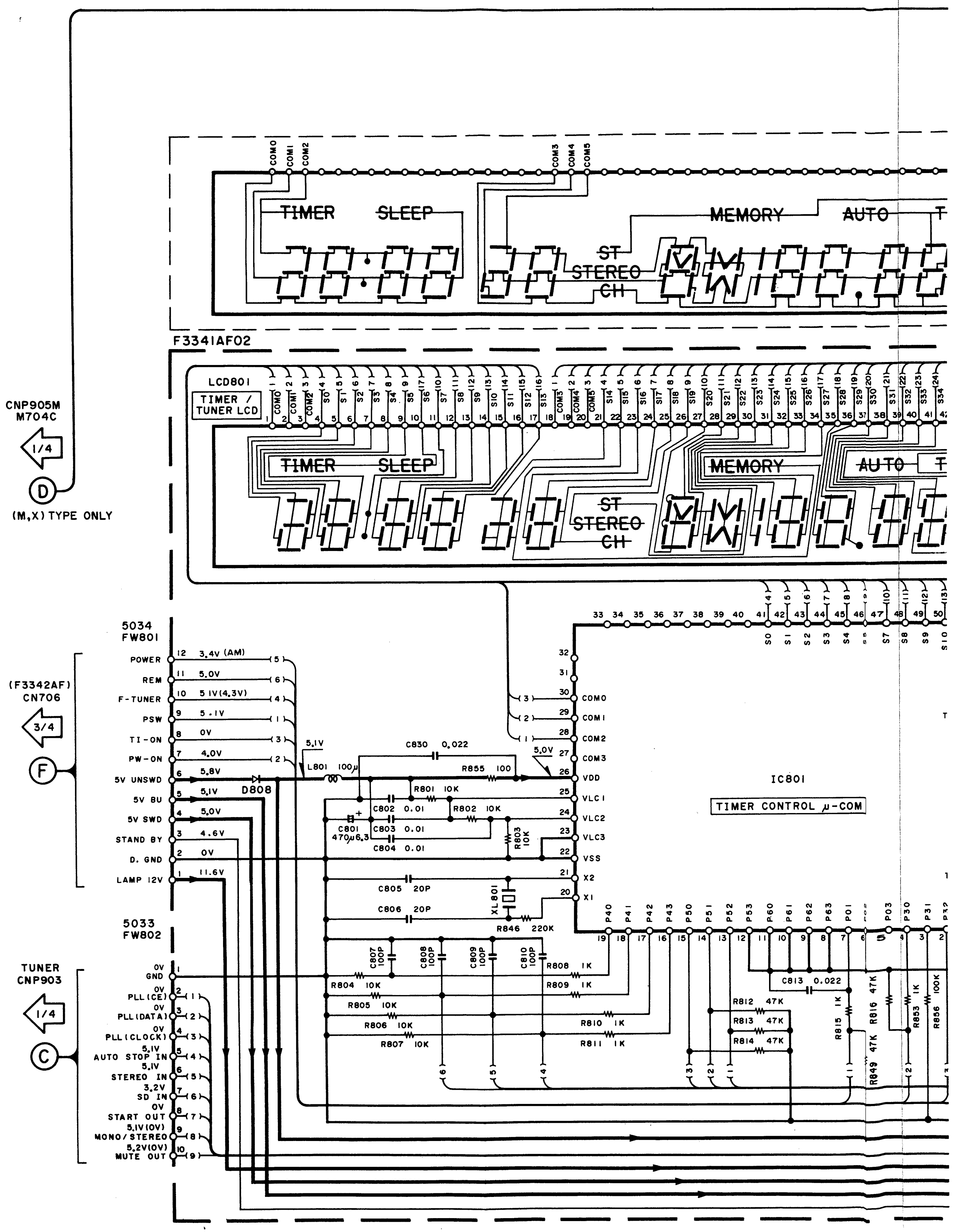
Y09-3580-00

KENWOOD

PC BOARD (COMPONENT SIDE VIEW : X-311)

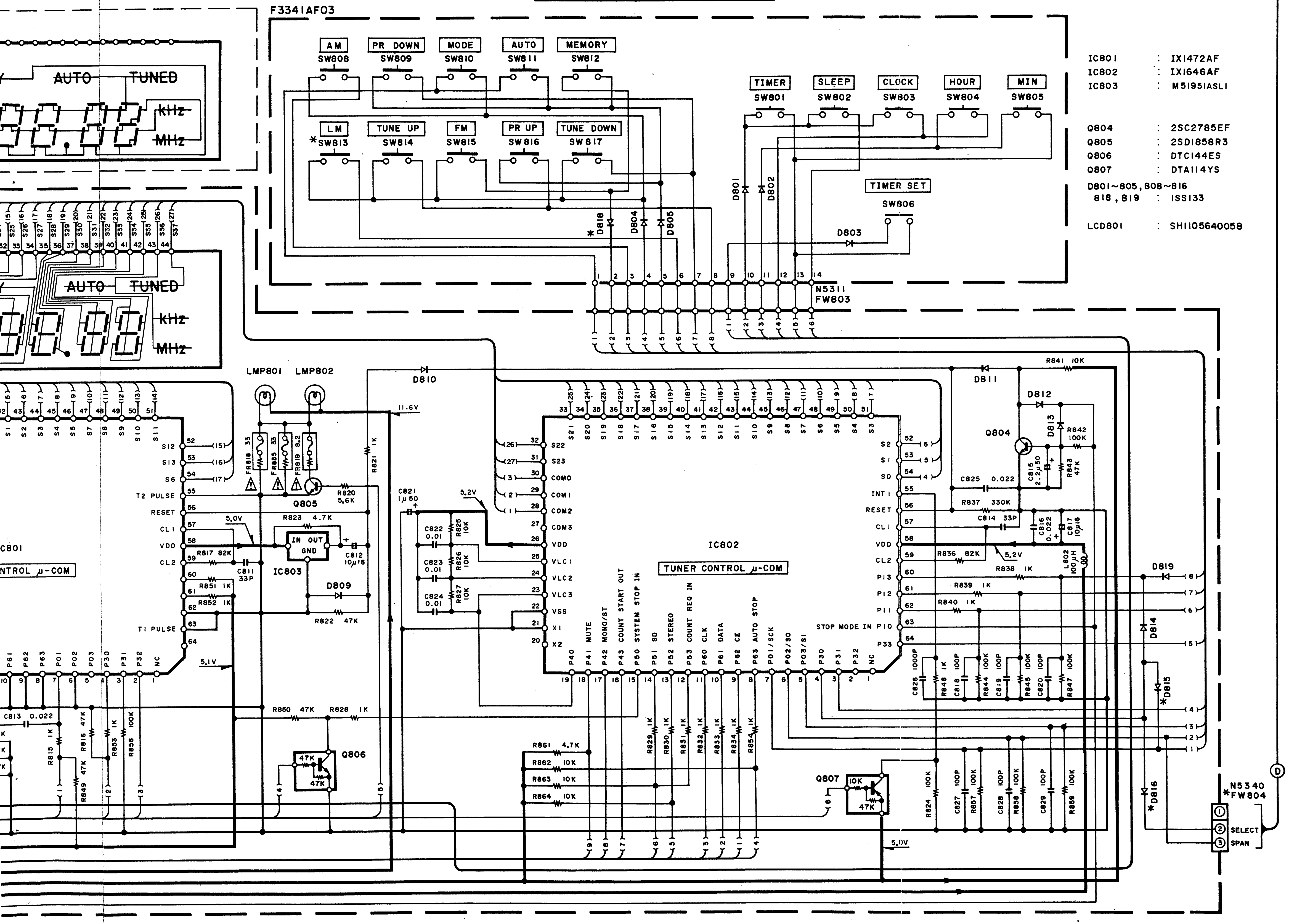

F3401AF02
SHARP M81X
CMK-81X
TIMER SET
SLEEP
TIMER
CLOCK
HOUR
MIN
MODE
MEMORY
AUTO
TUNE DOWN
TUNE UP
FM
AM
PR UP
SW806
SW802
SW801
SW804
SW805
SW810
SW811
SW813
SW814
SW815
SW817
D804
D805
CNP905F
F3344AF
CMK-34QSX
DOLBY
REC
2 PAS
FADE
STP
TIMER
PLAY← OFF →REC
MOD COM
SW719
1BWD
LED710
LED709
LED708
F3344

Refer to the schematic diagram for the values of resistors and capacitors.


F3341AF02
LCD801
TIMER / TUNER LCD
TIMER
SLEEP
MEMORY
AUTO
ST
STEREO
CH
COM0
COM1
COM2
COM3
COM4
COM5
CNP905M
M704C
1/4
D
(M,X) TYPE ONLY
5034
FW801
(F3342AF)
CN706
3/4
F
POWER
REM
F-TUNER
PSW
TI-ON
PW-ON
5V UNSWD
5V BU
5V SWD
STAND BY
D. GND
LAMP 12V
3.4V (AM)
5.0V
5.1V(4.3V)
5.1V
0V
4.0V
5.8V
5.1V
5.0V
4.6V
0V
11.6V
D808
L801 100μ
C830 0.022
R855 100
R801 10K
R802 10K
R803 10K
C801 470μ6.3
C802 0.01
C803 0.01
C804 0.01
C805 20P
C806 20P
XL801
R846 220K
VDD
VLC1
VLC2
VLC3
VSS
X2
X1
IC801
TIMER CONTROL μ-COM
5033
FW802
TUNER
CNP903
1/4
C
0V GND
0V PLL(CE)
0V PLL(DATA)
0V PLL(CLOCK)
5.1V AUTO STOP IN
5.1V STEREO IN
3.2V SD IN
0V START OUT
5.1V(0V) MONO/STEREO
5.2V(0V) MUTE OUT
C807 100P
C808 100P
C809 100P
C810 100P
R804 10K
R805 10K
R806 10K
R807 10K
R808 1K
R809 1K
R810 1K
R811 1K
R812 47K
R813 47K
R814 47K
C813 0.022
R815 1K
R816 47K
R853 1K
R856 100K
R849 47K
P40
P41
P42
P43
P50
P51
P52
P53
P60
P61
P62
P63
P01
P03
P30
P31

DESTINATION COUNTRY	ABB.	D815	D816	D818	SW813	FW804
EUROPE ENGLAND	E T	YES	NO	NO	YES	NO
U.S.A	K	NO	NO	NO	NO	NO
GENERAL MARKET	M,X	NO	YES	YES	NO	YES

GND LINE
+B LINE


F3341AF03
AM SW808
PR DOWN SW809
MODE SW810
AUTO SW811
MEMORY SW812
LM *SW813
TUNE UP SW814
FM SW815
PR UP SW816
TUNE DOWN SW817
TIMER SW801
SLEEP SW802
CLOCK SW803
HOUR SW804
MIN SW805
TIMER SET SW806
D801
D802
D803
D804
D805
*D818
N5311 FW803
AUTO
TUNED
kHz
MHz
LMP801
LMP802
D810
D811
D812
D813
D814
*D815
*D816
D819
Q804
Q805
Q806
Q807
IC803
IN OUT GND
IC802
TUNER CONTROL µ-COM
C801
NTROL µ-COM
11.6V
5.2V
5.0V
5.1V
N5340 *FW804
SELECT
SPAN
D

IC801	:	IX1472AF
IC802	:	IX1646AF
IC803	:	M51951ASL1
Q804	:	2SC2785EF
Q805	:	2SD1858R3
Q806	:	DTC144ES
Q807	:	DTA114YS
D801~805, 808~816 818, 819	:	1SS133
LCD801	:	SH1105640058

- DC voltages are as measured with a high impedance voltmeter. Values may vary slightly due to variations between individual instruments or/and units.

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

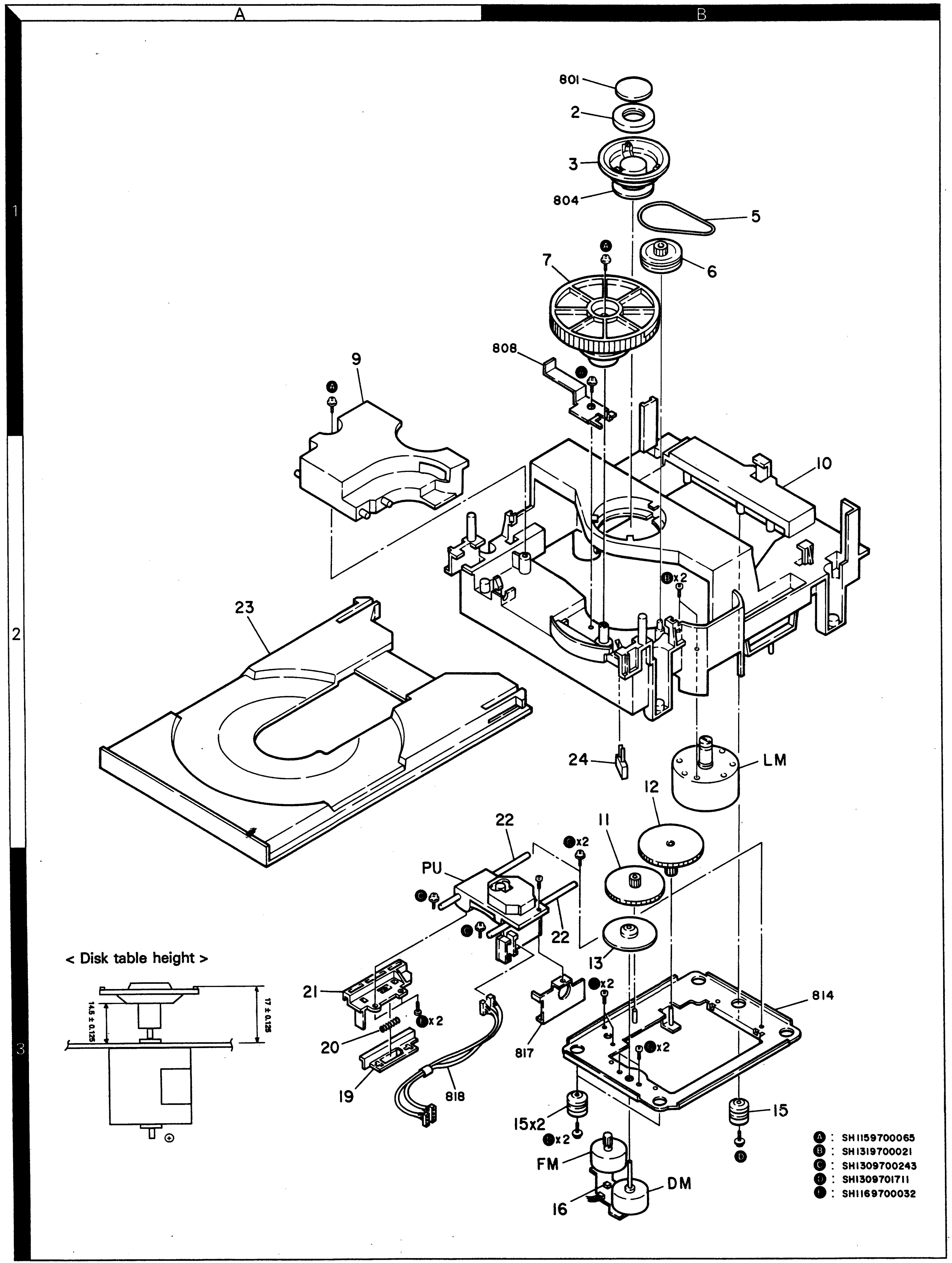
X-311 (4/4)

Y09-3580-00

X-311/L

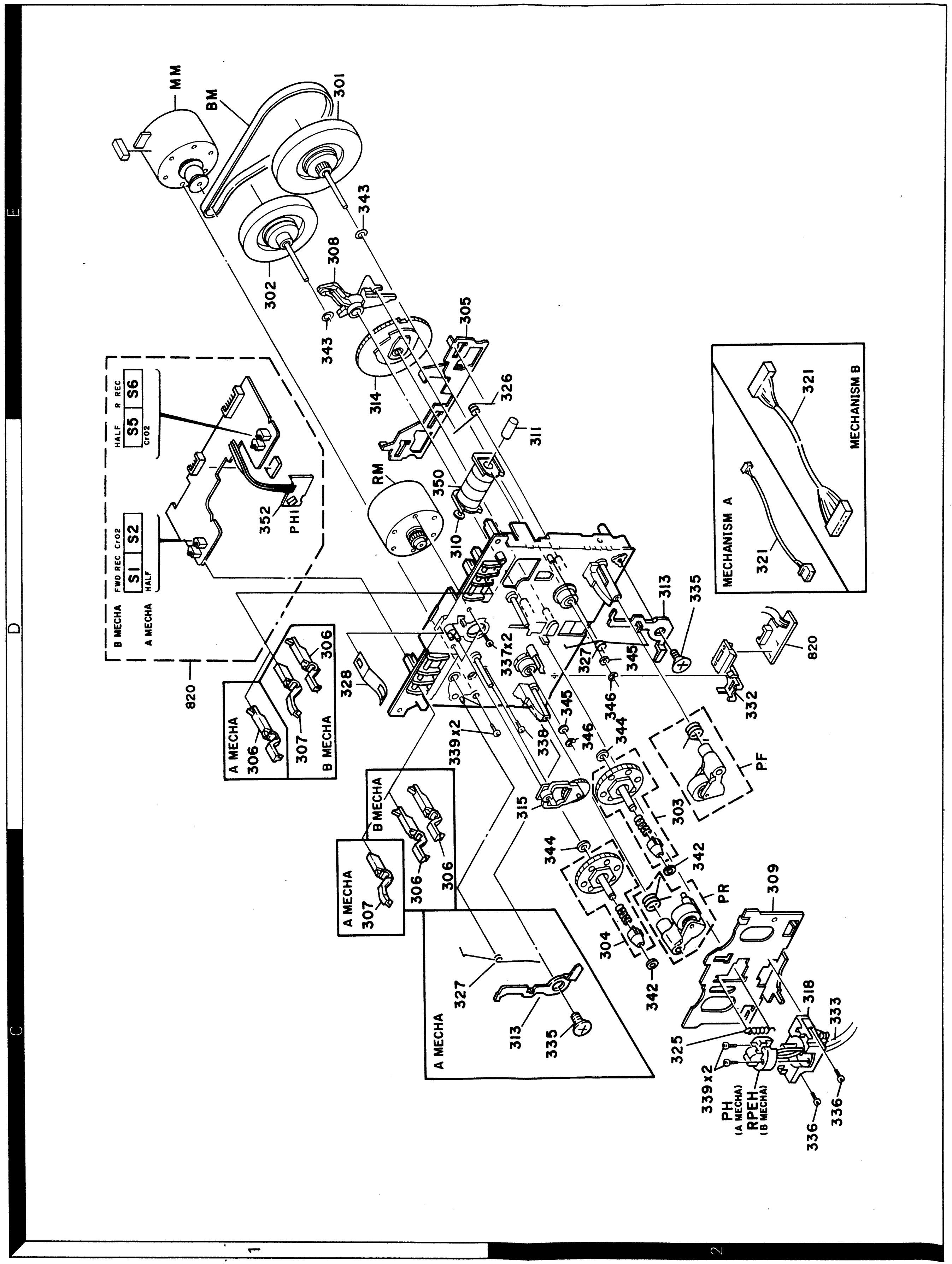
KENWOOD

EXPLODED VIEW (MECHANISM : A-311)


A
B
1
2
3
801
2
3
804
5
6
7
808
9
10
23
24
LM
12
11
22
PU
22
13
21
20
19
818
817
814
15x2
15
FM
DM
16
x2
< Disk table height >
14.5 ± 0.125
17 ± 0.125
A : SH1159700065
B : SH1319700021
C : SH1309700243
D : SH1309701711
E : SH1169700032

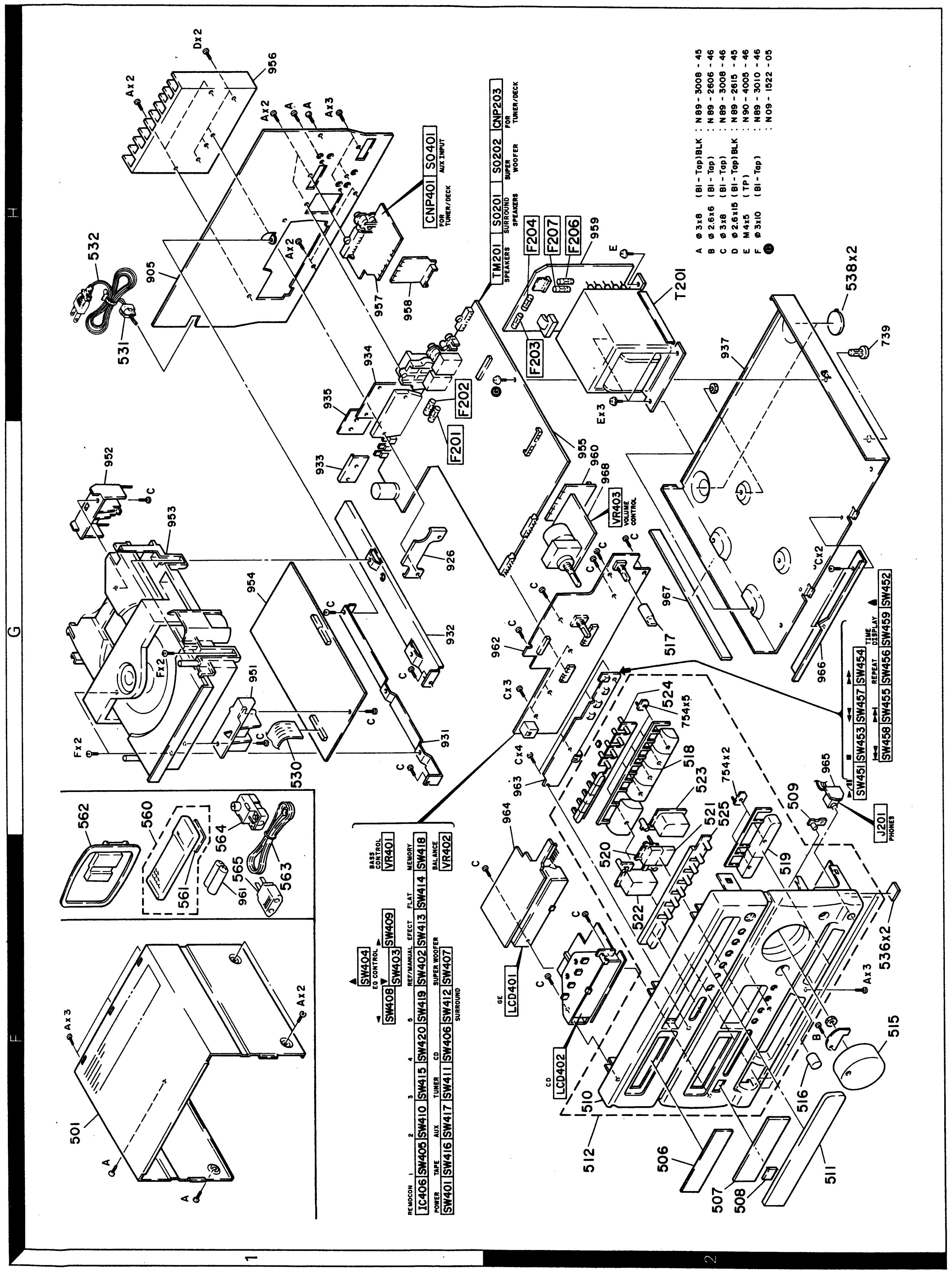
Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (MECHANISM : X-311)


E
D
C
1
2
MM
BM
301
343
308
302
343
305
314
326
311
RM
350
310
352
PH1
B MECHA
A MECHA
FWD REC CrO2
HALF
S1
S2
HALF
R REC
CrO2
S5
S6
820
328
306
A MECHA
306
307
B MECHA
313
335
327
345
337x2
345
346
344
346
344
339x2
338
315
303
PF
B MECHA
306
306
A MECHA
307
344
342
304
342
PR
309
327
313
335
A MECHA
318
333
325
339x2
PH (A MECHA)
RPEH (B MECHA)
336
336
321
MECHANISM A
321
MECHANISM B
820
332

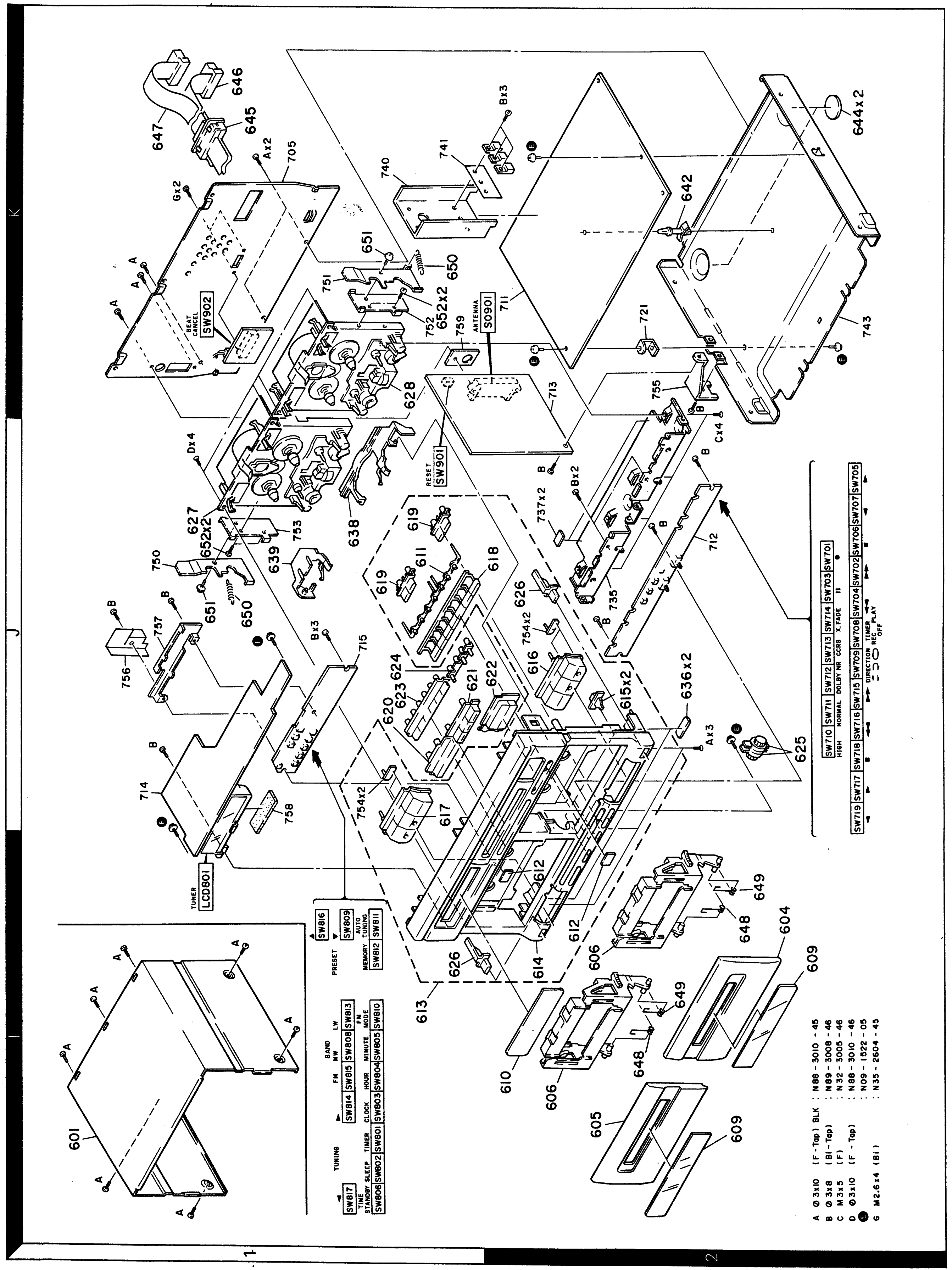
Parts with the exploded numbers larger than 700 are not supplied

EXPLODED VIEW (UNIT : A-311)


A Ø3x8 (Bi-Tap)BLK : N89-3008-45
B Ø2.6x6 (Bi-Tap) : N89-2606-46
C Ø3x8 (Bi-Tap) : N89-3008-46
D Ø2.6x15 (Bi-Tap)BLK : N89-2615-45
E M4x5 (TP) : N90-4005-46
F Ø3x10 (Bi-Tap) : N89-3010-46
G : N09-1522-05
TM201 SPEAKERS
S0201 SURROUND SPEAKERS
S0202 SUPER WOOFER
CNP203 FOR TUNER/DECK
CNP401 FOR TUNER/DECK
S0401 AUX INPUT
F204
F207
F206
F203
F202
F201
VR403 VOLUME CONTROL
T201
J201 PHONES
SW451 SW453 SW457 SW454
SW458 SW455 SW456 SW459 SW452
TIME DISPLAY
RESET
VR401 BASS CONTROL
VR402 BALANCE
SW404 SW403 SW408 SW409 EQ CONTROL
REMOCON
IC406 SW405 SW410 SW415 SW420 SW419 SW402 SW413 SW414 SW418
POWER TAPE AUX TUNER CD SUPER WOOFER SURROUND
SW401 SW416 SW417 SW411 SW406 SW412 SW407
REF/MANUAL EFFECT FLAT MEMORY
LCD401 GE
LCD402 CD
501
506
507
508
509
510
511
512
515
516
517
518
519
520
521
522
523
524
525
530
531
532
536x2
538x2
560
561
562
563
564
565
739
754x2
754x5
905
926
931
932
933
934
935
937
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
Ax2
Ax3
Bx2
Cx2
Cx3
Cx4
Dx2
Ex3
Fx2
A
B
C
E
G
F
G
H
1
2

Parts with the exploded numbers larger than 700 are not supplied.

EXPLODED VIEW (UNIT : X-311)


A Ø3x10 (F-Tap) BLK : N88-3010-45
B Ø3x8 (Bi-Tap) : N89-3008-46
C M3x5 (F) : N32-3005-46
D Ø3x10 (F-Tap) : N88-3010-46
E : N09-1522-05
G M2.6x4 (Bi) : N35-2604-45
SW902 BEAT CANCEL
S0901 ANTENNA
SW901 RESET
LCD801 TUNER
SW816 PRESET
SW809 AUTO
SW812 SW811 MEMORY TUNING
SW817 TUNING
SW814 SW815 SW808 SW813 FM MW LW BAND
SW806 SW802 SW801 SW803 SW804 SW805 SW810
TIME STANDBY SLEEP TIMER CLOCK HOUR MINUTE FM MODE
SW710 SW711 SW712 SW713 SW714 SW703 SW701
HIGH NORMAL DOLBY NR CCRS X.FADE
SW719 SW717 SW718 SW716 SW715 SW709 SW708 SW704 SW702 SW706 SW707 SW705
DIRECTION TIMER REC PLAY OFF
601
604
605
606
609
610
611
612
613
614
615x2
616
617
618
619
620
621
622
623
624
625
626
627
628
636x2
638
639
642
644x2
645
646
647
648
649
650
651
652x2
705
711
712
713
714
715
721
735
737x2
740
741
743
750
751
752
753
754x2
755
756
757
758
759
Ax2
Ax3
Bx2
Bx3
Cx4
Dx4
Gx2
A
B
C
D
E
G
I
J
K
1
2

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A-311/X-311

PARTS LIST

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
A-311 / X-311 / X-311L (UD-3)						
501	1F	*	SH1101070166	CABINET (A-311)		
506	2F	*	SH1101240146	CD INDICATOR		
507	2F	*	SH1101240147	GE WINDOW		
508	2F	*	SH1101240152	REMOTE CONTROLLER FILTER		
509	2G	*	SH1101540791	EFFECT INDICATOR		
510	2F	*	SH1101580614	PANEL (A-311)		
511	2F	*	SH1101580615	TRAY PANEL		
512	2F	*	SH1101580608	PANEL ASSY (A-311)		
515	2F	*	SH1101741085	KNOB (VOLUME)		
516	2F	*	SH1101741086	KNOB (BASS)		
517	2G	*	SH1101741087	KNOB (BALANCE)		
518	2G	*	SH1101540972	LED WITH TOP (A)		
519	2F	*	SH1101741090	LED WITH TOP		
520	2G	*	SH1101741145	KNOB (GRAPHIC EQUALIZER UP)		
521	2G	*	SH1101741146	KNOB (GRAPHIC EQUALIZER DOWN)		
522	2F	*	SH1101741147	KNOB (GRAPHIC EQUALIZER L)		
523	2G	*	SH1101741148	KNOB (GRAPHIC EQUALIZER R)		
524	2G	*	SH1101741095	KNOB (MEMORY/FLAT/EFFECT/REF)		
525	2G	*	SH1101741096	KNOB (CD FUNCTION)		
530	1G	*	SH1105121749	FLEXIBLE WIRE		
⚠ 531	1H	*	SH1142040001	CORD BUSHING		
⚠ 532	1H	*	SH1105000040	AC CORD	TE	
⚠ 532	1H	*	SH1105000041	AC CORD	MX	
⚠ 532	1H	*	SH1125000036	AC CORD	K	
536	2F	*	SH1163400039	FOOT (FRONT FELT)		
538	2H	*	SH1163400025	FOOT (BACK)		
560	1G	*	A70-0526-08	REMOTE CONTROLLER	KMX	
560	1G	*	A70-0527-08	REMOTE CONTROLLER	ET	
561	1F	*	A09-0107-08	BATTERY COVER FOR REMOCON		
562	1G	*	SH1105020013	LOOP ANTENNA		
563	1F	*	SH1125040004	FM ANTENNA		
564	1F	*	T90-0136-05	ANTENNA ADAPER	ET	
⚠ 565	1F		E03-0115-05	AC PLUG ADAPTER	M	
601	1I	*	SH1101070166	CABINET (X-311)		
604	2I	*	SH1101100447	T1 CASSETTE COVER		
605	2I	*	SH1101100448	T2 CASSETTE COVER		
606	2I	*	SH1101170487	CASSETTE HOLDER		
609	2I	*	SH1101240145	CASSETTE WINDOW		
610	2I	*	SH1101240148	TUNER WINDOW		
611	1J	*	SH1101540793	LIGHTING CHIP (7KEYS)		
612	2I	*	SH1101560236	ORANGE SHEET		
613	1I	*	SH1101580608	PANEL ASSY (X-311L)	E	
613	1I	*	SH1101580609	PANEL ASSY (X-311)	KMX	
613	1I	*	SH1101580614	PANEL ASSY (X-311L)	T	
614	2I	*	SH1101580573	FRONT PANEL		
615	2J	*	SH1101741088	SLIDE KNOB		
616	2J	*	SH1101741143	T1 CASSETTE KNOB	MX	
616	2J	*	SH1101741149	T1 CASSETTE KNOB	KET	
617	1J	*	SH1101741144	T2 CASSETTE KNOB	MX	
617	1J	*	SH1101741150	T2 CASSETTE KNOB	KET	
618	2J	*	SH1101741099	KNOB (7 KEYS)		
619	1J	*	SH1101741100	KNOB (FF REW)		
620	1J	*	SH1101741101	KNOB (TUNNING)		

E: Scandinavia & Europe K: USA P: Canada W:Europe
Y: PX(Far East, Hawaii) T: England M: Other Areas
Y: AAFES(Europe) X: Australia

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
621	1J	*	SH1101741102	KNOB (BAND)	ET	
621	1J	*	SH1101741142	KNOB (BAND)	KMX	
622	2J	*	SH1101741103	KNOB (PRESET)		
623	1J	*	SH1101741104	KNOB (TIMER)		
624	1J	*	SH1101741141	KNOB (MODE)		
625	2J	*	SH1302500023	DAMPER		
626	1I,2J	*	SH1101741106	KNOB (EJECT)		
627	1J	*	SH1101850012	MECHANISM ASSY (T1,PLAYBACK)		
628	1K	*	SH1101850013	MECHANISM ASSY (T2,REC/PLAY)		
636	2J	*	SH1123400039	FOOT (FRONT,FELT)		
638	1J	*	SH1102520007	T2 CASSETTE LOCK		
639	1J	*	SH1102520006	T1 CASSETTE LOCK		
642	2K	*	SH1102140337	DECK PWB		
644	2K	*	SH1163400025	FOOT (BACK,FELT)		
645	1K	*	SH1102040087	STOPPER		
646	1K	*	SH1105121737	13 PIN CONNECTOR(WHITE)		
647	1K	*	SH1105121736	15 PIN CONNECTOR(RED)		
648	2I	*	SH1102580733	CASSETTE UP SPRING L		
649	2I	*	SH1102580734	CASSETTE UP SPRING R		
650	1J,1K	*	SH1202580393	SPRING		
651	1J,1K	*	SH1209700096	SCREW (EJECT LEVER)		
652	1J,1K		5MBTPP2605TZ	SCREW		
-			B46-0092-03	WARRANTY CARD	K	
-			B46-0096-23	WARRANTY CARD	X	
-			B46-0122-13	WARRANTY CARD	E	
-			B46-0143-13	WARRANTY CARD	T	
-		*	B60-0434-00	INSTRUCTION MANUAL (ENGLISH)	KMTX	
-		*	B60-0435-00	INSTRUCTION MANUAL (FRENCH)	E	
-		*	B60-0436-00	INSTRUCTION MANUAL (NEDERLAND)	E	
-		*	H50-0054-08	ITEM CARTON CASE (UD3)	K	
-		*	H50-0055-08	ITEM CARTON CASE (UD3)	MX	
-		*	H50-0056-08	ITEM CARTON CASE (A-311)	ET	
-		*	H50-0057-08	ITEM CARTON CASE (X-311L)	ET	
-		*	H60-0012-08	OUTER CARTON CASE (UD3)	ET	
-		*	SH1109020451	POLYSTYRENE FIXTURE L (A-311)	K	
-		*	SH1109020452	POLYSTYRENE FIXTURE R (A-311)	K	
-		*	SH1109020453	POLYSTYRENE FIXTURE L (X-311)	K	
-		*	SH1109020454	POLYSTYRENE FIXTURE R (X-311)	K	
-		*	SH1109020477	POLYSTYRENE FIXTURE L (A-311)	EMTX	
-		*	SH1109020478	POLYSTYRENE FIXTURE R (A-311)	EMTX	
-		*	SH1109020479	POLYSTYRENE FIXTURE L (X-311)	EMTX	
-		*	SH1109020480	POLYSTYRENE FIXTURE R (X-311)	EMTX	
-		*	SH1109050091	PROTECTION BAG (UNIT)		
-		*	SH1169060007	POLY BAG (ACCESSORY)		
ELECTRIC PARTS						
LED1		*	LT3P8D	LED		
LED401-408		*	LT3P8D	LED		
LED409		*	GL2PR7	LED		
LED701-711		*	LT3P8D	LED		
LMP401-404		*	SH1106260062	LAMP		
LMP801,802		*	SH1106260062	LAMP		
C1			CE04KW0J331M	ELECTRO 330UF 6.3WV		
C2			CE04KW1A101M	ELECTRO 100UF 10WV		
C3 ,4			CK45FB1H223K	CERAMIC 0.022UF K		

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C5 ,6			CE04KW1A101M	ELECTRO 100UF 10WV		
C7			CE04KW1E101M	ELECTRO 100UF 25WV		
C11 ,12			CE04KW1A471M	ELECTRO 470UF 10WV		
C13 ,14			CF92FV1H823J	MF 0.082UF J		
C15 ,16			CK45FB1H272K	CERAMIC 2700PF K		
C17 ,18			CF92FV1H123J	MF 0.012UF J		
C21 ,22			CE04KW1C100M	ELECTRO 10UF 16WV		
C23 ,24			CE04BP1H010M	NP-ELEC 1.0UF 50WV		
C25 ,26			CK45FB1H122K	CERAMIC 1200PF K		
C35			CS15E1DR47M	TANTAL 0.47UF 20WV		
C37			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C38			CK41DB1H101K	CYLND CHIP C 100PF K		
C40 ,41			CC41DSL1H180J	CYLND CHIP C 18PF J		
C42			CK41DB1H101K	CYLND CHIP C 100PF K		
C44 ,45			CK45FB1H103K	CERAMIC 0.010UF K		
C46			CK41DB1H471K	CYLND CHIP C 470PF K		
C47 ,48			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C49			CK45FB1H272K	CERAMIC 2700PF K		
C50			CK45FB1H153K	CERAMIC 0.015UF K		
C51 ,52			CC41DSL1H220J	CYLND CHIP C 22PF J		
C53			CK45FB1C152K	CERAMIC 1500PF K		
C54			CE04KW1E4R7M	ELECTRO 4.7UF 25WV		
C55			CC41DSL1H1R0C	CYLND CHIP C 1.0PF C		
C56			CC41DSL1H180J	CYLND CHIP C 18PF J		
C57 -59			CE04KW1C470M	ELECTRO 47UF 16WV		
C60			CK45FB1H223K	CERAMIC 0.022UF K		
C61 ,62			CC41DSL1H390J	CYLND CHIP C 39PF J		
C63			CK73FB1H103K	CHIP C 0.010UF K		
C64			CK73FB1H102K	CHIP C 1000PF K		
C65			CK45FB1H682K	CERAMIC 6800PF K		
C66			CF92FV1H823J	MF 0.082UF J		
C68			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C69			CK41DB1H471K	CYLND CHIP C 470PF K		
C71			CE04KW1C220M	ELECTRO 22UF 16WV		
C72			CK41DB1H101K	CYLND CHIP C 100PF K		
C73			CK45FB1H223K	CERAMIC 0.022UF K		
C74			CC41DSL1H220J	CYLND CHIP C 22PF J		
C75			CK45FB1H333K	CERAMIC 0.033UF K		
C76			CK73FB1H104Z	CHIP C 0.10UF Z		
C77			CC41DSL1H680J	CYLND CHIP C 68PF J		
C78			CC41DSL1H270J	CYLND CHIP C 27PF J		
C80			CK45FB1H104K	CERAMIC 0.10UF K		
C81			CE04KW1C100M	ELECTRO 10UF 16WV		
C82			CE04KW0J221M	ELECTRO 220UF 6.3WV		
C83			CE04KW1E4R7M	ELECTRO 4.7UF 25WV		
C84			CK41DB1H102K	CYLND CHIP C 1000PF K		
C85			CK45FB1H104K	CERAMIC 0.10UF K		
C86			CE04KW1E4R7M	ELECTRO 4.7UF 25WV		
C87 ,88			CK73FB1H123K	CHIP C 0.012UF K		
C89			CK73FB1H222K	CHIP C 2200PF K		
C90			CE04KW1A101M	ELECTRO 100UF 10WV		
C91			CK73FB1H222K	CHIP C 2200PF K		
C92			CE04KW1A101M	ELECTRO 100UF 10WV		
C93			CK45FB1C104K	CERAMIC 0.10UF K		
C94			CE04KW1A101M	ELECTRO 100UF 10WV		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C95			CK45FB1H223K	CERAMIC 0.022UF K		
C98			CE04KW1C470M	ELECTRO 47UF 16WV		
C101			CE04KW1A101M	ELECTRO 100UF 10WV		
C102			CK73FB1H103K	CHIP C 0.010UF K		
C103			CE04KW1A101M	ELECTRO 100UF 10WV		
C104-106			CK45FB1H103K	CERAMIC 0.010UF K		
C107-109			CK41DB1H101K	CYLND CHIP C 100PF K		
C110-112			CK73FB1H101K	CHIP C 100PF K		
C113			CK73FB1E473K	CHIP C 0.047UF K		
C114,115			CC41DSL1H330J	CYLND CHIP C 33PF J		
C116			CK41DB1H102K	CYLND CHIP C 1000PF K		
C131,132			CK45FB1H103K	CERAMIC 0.010UF K		
C133			CK73FB1H103K	CHIP C 0.010UF K		
C134			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C148			CK41DB1H102K	CYLND CHIP C 1000PF K		
C150			CK73FB1H101K	CHIP C 100PF K		
C201			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C202			CC45FSL1H681J	CERAMIC 680PF J		
C203			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C204			CK45FB1H182K	CERAMIC 1800PF K		
C205			CK45FB1H683J	CERAMIC 0.068UF J		
C206			CK45FB1H182K	CERAMIC 1800PF K		
C207			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C208			CK45FB1H472K	CERAMIC 4700PF K		
C209			CK45FB1H273K	CERAMIC 0.027UF K		
C210			CK45FB1H472K	CERAMIC 4700PF K		
C211			CK45FB1H683K	CERAMIC 0.068UF K		
C212			CK45FB1H123K	CERAMIC 0.012UF K		
C213,214			CK45FB1H103K	CERAMIC 0.010UF K		
C215,216			CK45FB1H273K	CERAMIC 0.027UF K		
C217			CK45FB1H472K	CERAMIC 4700PF K		
C218			CK45FB1H273K	CERAMIC 0.027UF K		
C219			CK45FB1H123K	CERAMIC 0.012UF K		
C220			CK45FB1H683K	CERAMIC 0.068UF K		
C221			CK45FB1H182K	CERAMIC 1800PF K		
C222			CK45FB1H683K	CERAMIC 0.068UF K		
C223			CK45FB1H472K	CERAMIC 4700PF K		
C224			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C225			CC45FSL1H681J	CERAMIC 680PF J		
C226			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C227			CK45FB1H182K	CERAMIC 1800PF K		
C228			CE04KW1HR47M	ELECTRO 0.47UF 50WV		
C229-234			CE04KW1C470M	ELECTRO 47UF 16WV		
C235			CK45FB1H223K	CERAMIC 0.022UF K		
C236,237			CC45FSL1H151J	CERAMIC 150PF J		
C238			CK45FB1H102K	CERAMIC 1000PF K		
C239,240			CE04KW1C100M	ELECTRO 10UF 16WV		
C241,242			CK45FB1H223K	CERAMIC 0.022UF K	K	
C241,242			CK45FB1H224K	CERAMIC 0.22UF K	MXET	
C243,244			CE04KW1H100M	ELECTRO 10UF 50WV		
C245,246			CC45FSL1H470J	CERAMIC 47PF J		
C250		*	SH1125900261	CERAMIC 0.01UF 250WV	K	
C250		*	SH1125900287	CERAMIC 0.01UF 250WV	MXET	
C251,252			CC45FSL1H101J	CERAMIC 100PF J		
C253			CK45FB1H223K	CERAMIC 0.022UF K		

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PARTS LIST

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C254			CE04KW1C470M	ELECTRO 47UF 16WV		
C255			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C256			CK45FB1H223K	CERAMIC 0.022UF K		
C257,258			CE04KW1V332M	ELECTRO 3300UF 35WV		
C259,260			CE04KW1E101M	ELECTRO 100UF 25WV		
C261,262			CK45FB1H223K	CERAMIC 0.022UF K		
C263,264			CE04KW1C101M	ELECTRO 100UF 16WV		
C265,266			CE04KW1C470M	ELECTRO 47UF 16WV		
C267,268			CK45FB1H223K	CERAMIC 0.022UF K		
C269,270			CK45FB1H473Z	CERAMIC 0.047UF Z		
C271			CE04KW1E472M	ELECTRO 4700UF 25WV		
C272			CE04KW1E222M	ELECTRO 2200UF 25WV		
C273,274			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C275			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C276			CK45FB1H223K	CERAMIC 0.022UF K		
C277,278			CE04KW1H100M	ELECTRO 10UF 50WV		
C279			CE04KW1C100M	ELECTRO 10UF 16WV		
C280			CE04KW1C470M	ELECTRO 47UF 16WV		
C281			CK45FB1H223K	CERAMIC 0.022UF K		
C282			CE04KW1C470M	ELECTRO 47UF 16WV		
C283			CE04KW1E222M	ELECTRO 2200UF 25WV		
C284			CK45FB1H223K	CERAMIC 0.022UF K		
C285,286			CE04KW1C470M	ELECTRO 47UF 16WV		
C287,288			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C289,290			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C291,292			CC45FSL1H471J	CERAMIC 470PF J		
C293,294			CC45FSL1H331J	CERAMIC 330PF J		
C295,296			CE04KW1V220M	ELECTRO 22UF 35WV	MXET	
C295,296			SH1105900364	ELECTRO 22UF 35WV	K	
C297,298			CC45FSL1H823K	CERAMIC 0.082UF K		
C299-301			CE04KW1H470M	ELECTRO 47UF 50WV		
C302,303			CE04KW1H100M	ELECTRO 10UF 50WV		
C304,305			CE04KW1H470M	ELECTRO 47UF 50WV		
C307-310			CK45FB1H104K	CERAMIC 0.10UF K		
C311,312			CC45FSL1H151J	CERAMIC 150PF J		
C351			CE04KW1C100M	ELECTRO 10UF 16WV		
C352			CK45FB1H223K	CERAMIC 0.022UF K		
C353			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C354			CE04KW1C221M	ELECTRO 220UF 16WV		
C355			CE04KW1C100M	ELECTRO 10UF 16WV		
C356			CK45FB1H223K	CERAMIC 0.022UF K		
C357			CE04KW1E102M	ELECTRO 1000UF 25WV		
C358,359			CE04KW1C100M	ELECTRO 10UF 16WV		
C360			CK45FB1H223K	CERAMIC 0.022UF K		
C361			CE04KW1E102M	ELECTRO 1000UF 25WV		
C362,363			CE04KW1C100M	ELECTRO 10UF 16WV		
C364			CK45FB1H223K	CERAMIC 0.022UF K		
C365			CE04KW1C100M	ELECTRO 10UF 16WV		
C366			CE04KW1C101M	ELECTRO 100UF 16WV		
C367			CK45FB1H223K	CERAMIC 0.022UF K		
C368			CE04KW1E102M	ELECTRO 1000UF 25WV		
C374			CK45FB1H473Z	CERAMIC 0.047UF Z		
C375			CE04KW1C100M	ELECTRO 10UF 16WV		
C401,402			CE04KW1C100M	ELECTRO 10UF 16WV		
C403,404			CC45FSL1H151J	CERAMIC 150PF J		

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C405,406			CC45FSL1H331J	CERAMIC 330PF J		
C407,408			CC45FSL1H151J	CERAMIC 150PF J		
C409,410			CE04KW1C470M	ELECTRO 47UF 16WV		
C411-414			CE04KW1C100M	ELECTRO 10UF 16WV		
C415,416			CK45FB1H223K	CERAMIC 0.022UF K		
C417,418			CC45FSL1H151J	CERAMIC 150PF J		
C419			CE04KW1C470M	ELECTRO 47UF 16WV		
C420			CK45FB1H223K	CERAMIC 0.022UF K		
C421			CK45FB1H332K	CERAMIC 3300PF K		
C422			CK45FB1H102K	CERAMIC 1000PF K		
C423,424			CK45FB1H223K	CERAMIC 0.022UF K		
C425,426			CE04KW1C470M	ELECTRO 47UF 16WV		
C427,428			CC45FSL1H101J	CERAMIC 100PF J		
C429			CK45FB1H223K	CERAMIC 0.022UF K		
C430			CE04KW1C470M	ELECTRO 47UF 16WV		
C431,432			CK45FB1H823K	CERAMIC 0.082UF K		
C433,434			CE04KW1HR68M	ELECTRO 0.68UF 50WV		
C435,436			CE04KW1C470M	ELECTRO 47UF 16WV		
C437,438			CC45FSL1H221J	CERAMIC 220PF J		
C439-442			CC45FSL1H151J	CERAMIC 150PF J		
C443-446			CE04KW1C100M	ELECTRO 10UF 16WV		
C447,448			CE04KW1C470M	ELECTRO 47UF 16WV		
C449			CK45FB1H223K	CERAMIC 0.022UF K		
C450			CE04KW1C470M	ELECTRO 47UF 16WV		
C451			CK45FB1H223K	CERAMIC 0.022UF K		
C452,453			CK45FB1H473Z	CERAMIC 0.047UF Z		
C454,455			CK45FB1H333K	CERAMIC 0.033UF K		
C456			CK45FB1H102K	CERAMIC 1000PF K		
C501			CK45FB1H271K	CERAMIC 270PF K		
C502			CK41DB1H271K	CYLND CHIP C 270PF K		
C503,504			CE04KW1A101M	ELECTRO 100UF 10WV		
C505,506			CK41DB1H221K	CYLND CHIP C 220PF K		
C507,508			CK41DB1H561K	CYLND CHIP C 560PF K		
C509,510			CK41DB1H221K	CYLND CHIP C 220PF K		
C511			CK45FB1H821K	CERAMIC 820PF K		
C512			CK41DB1H821K	CYLND CHIP C 820PF K		
C513			CE04KW1C221M	ELECTRO 220UF 16WV		
C514,515			CE04KW1C100M	ELECTRO 10UF 16WV		
C516			CE04KW1C220M	ELECTRO 22UF 16WV		
C517			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C518			CK45FB1H333K	CERAMIC 0.033UF K		
C519,520			CE04KW1H4R7M	ELECTRO 4.7UF 50WV		
C521			CK45FB1H333K	CERAMIC 0.033UF K		
C523			CE04KW1C470M	ELECTRO 47UF 16WV		
C525,526			CK45FB1H103K	CERAMIC 0.010UF K		
C527,528			CK41DB1H391K	CYLND CHIP C 390PF K		
C529			CK45FB1H222K	CERAMIC 2200PF K		
C530			CK45FB1H223K	CERAMIC 0.022UF K		
C531			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C532			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C533			CE04KW1C470M	ELECTRO 47UF 16WV		
C535,536			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C539,540			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C541			CE04KW1C101M	ELECTRO 100UF 16WV		
C542,543			CE04KW1H010M	ELECTRO 1.0UF 50WV		

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A-311/X-311

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C544			CE04KW1C220M	ELECTRO	22UF	16WV		
C545,546			CE04KW1C100M	ELECTRO	10UF	16WV		
C547,548			CE04KW1HR22M	ELECTRO	0.22UF	50WV		
C549,550			CE04KW1C100M	ELECTRO	10UF	16WV		
C551			CK45FB1H473Z	CERAMIC	0.047UF	Z		
C552			CE04KW1C470M	ELECTRO	47UF	16WV		
C553,554			CK41DB1H221K	CYLND CHIP C	220PF	K		
C555			CE04KW1C100M	ELECTRO	10UF	16WV		
C557,558			CE04KW1C100M	ELECTRO	10UF	16WV		
C559			CE04KW1C470M	ELECTRO	47UF	16WV		
C561,562			CE04KW1C100M	ELECTRO	10UF	16WV		
C563			CE04KW1C101M	ELECTRO	100UF	16WV		
C564			CE04KW1C100M	ELECTRO	10UF	16WV		
C565			CK41DB1H221K	CYLND CHIP C	220PF	K		
C566			CK45FB1H221K	CERAMIC	220PF	K		
C567,568			CE04KW1A470M	ELECTRO	47UF	10WV		
C569,570			CE04KW1C100M	ELECTRO	10UF	16WV		
C571			CE04KW1HR22M	ELECTRO	0.22UF	50WV		
C572			CK45FB1H223K	CERAMIC	0.022UF	K		
C573			CK45FB1H221K	CERAMIC	220PF	K		
C574			CK41DB1H221K	CYLND CHIP C	220PF	K		
C575			CC45FSL1H561J	CERAMIC	560PF	J	KMX	
C576			CE04KW1C470M	ELECTRO	47UF	16WV		
C577,578			CQ93M1H222J	MYLAR	2200PF	J		
C579			CQ93M1H332J	MYLAR	3300PF	J		
C580			CE04KW1H4R7M	ELECTRO	4.7UF	50WV		
C581			CE04KW1HR47M	ELECTRO	0.47UF	50WV		
C582			CE04KW1C100M	ELECTRO	10UF	16WV		
C583			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C584			CE04KW1C101M	ELECTRO	100UF	16WV		
C585			CK41DB1H561K	CYLND CHIP C	560PF	K		
C586			CE04KW1C331M	ELECTRO	330UF	16WV		
C587,588			CK45FB1H822J	CERAMIC	8200PF	J		
C589,590			CK45FB1H153K	CERAMIC	0.015UF	K		
C591,592			CK45FB1H562K	CERAMIC	5600PF	K		
C593,594			CK45FB1H561K	CERAMIC	560PF	K		
C595,596			CK45FB1H562K	CERAMIC	5600PF	K		
C597,598			CE04KW1HR22M	ELECTRO	0.22UF	50WV		
C599,600			CK45FB1H152K	CERAMIC	1500PF	K		
C601			CE04KW1C100M	ELECTRO	10UF	16WV		
C603,604			CE04KW1C100M	ELECTRO	10UF	16WV		
C605,606			CK41DB1H151K	CYLND CHIP C	150PF	K		
C607-610			CE04KW1C100M	ELECTRO	10UF	16WV		
C611,612			CK45FB1H153K	CERAMIC	0.015UF	K		
C613-616			CE04KW1C100M	ELECTRO	10UF	16WV		
C617			CK45FB1H561K	CERAMIC	560PF	K		
C618			CQ93M1H682J	MYLAR	6800PF	J		
C619			CQ93M1H153J	MYLAR	0.015UF	J		
C621,622			CE04KW1C470M	ELECTRO	47UF	16WV		
C623,624			CE04KW1C100M	ELECTRO	10UF	16WV		
C625			CE04KW1C470M	ELECTRO	47UF	16WV		
C627,628			CE04KW1C100M	ELECTRO	10UF	16WV		
C631,632			CE04KW1C100M	ELECTRO	10UF	16WV		
C633,634			CE04KW1C470M	ELECTRO	47UF	16WV		
C636			CE04KW1C100M	ELECTRO	10UF	16WV		

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C637			CK45FB1H223Z	CERAMIC	0.022UF	Z		
C701			CE04KW1A470M	ELECTRO	47UF	10WV		
C702			CK45FB1E223K	CERAMIC	0.022UF	K		
C703,704			CC41DSL1H330J	CYLND CHIP C	33PF	J		
C705			CK45FB1H223K	CERAMIC	0.022UF	K		
C706			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C707			CE04KW1C100M	ELECTRO	10UF	16WV		
C708			CK73DB1H101K	CHIP C	100PF	K		
C709			CK45FB1H152K	CERAMIC	1500PF	K		
C710-712			CC41DSL1H560J	CYLND CHIP C	56PF	J		
C713,714			CK45FB1H152K	CERAMIC	1500PF	K		
C733			CK45FB1H104K	CERAMIC	0.10UF	K		
C734			CE04KW1C100M	ELECTRO	10UF	16WV		
C735			CE04KW1A471M	ELECTRO	470UF	10WV		
C736			CK45FB1H104K	CERAMIC	0.10UF	K		
C737,738			CE04KW1C100M	ELECTRO	10UF	16WV		
C801			CE04KW0J471M	ELECTRO	470UF	6.3WV		
C802-804			CK45FB1H103M	CERAMIC	0.010UF	M		
C805,806			CC41DSL1H200J	CYLND CHIP C	20PF	J		
C807-810			CK41DB1H101K	CYLND CHIP C	100PF	K		
C811			CC41DSL1H330J	CYLND CHIP C	33PF	J		
C812			CE04KW1C100M	ELECTRO	10UF	16WV		
C813			CK45FB1H222Z	CERAMIC	2200PF	Z		
C814			CC41DSL1H330J	CYLND CHIP C	33PF	J		
C815			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C816			CK45FB1H223K	CERAMIC	0.022UF	K		
C817			CE04KW1C100M	ELECTRO	10UF	16WV		
C818-820			CK41DB1H101K	CYLND CHIP C	100PF	K		
C821			CE04KW1H010M	ELECTRO	1.0UF	50WV		
C822-824			CK45FB1H103K	CERAMIC	0.010UF	K		
C825			CK45FB1H222K	CERAMIC	2200PF	K		
C826			CK41DB1H102K	CYLND CHIP C	1000PF	K		
C827-829			CK41DB1H101K	CYLND CHIP C	100PF	K		
C830			CK45FB1H222K	CERAMIC	2200PF	K		
C901			CK45FB1H222Z	CERAMIC	2200PF	Z		
C907-910			CK45FB1H222Z	CERAMIC	2200PF	Z		
C911			CK41DB1H101K	CYLND CHIP C	100PF	K		
C912			CK45FB1H222Z	CERAMIC	2200PF	Z		
C913			SH1425900027	BACKUP C	0.047F	5.5WV		
C914			CK45FB1H222Z	CERAMIC	2200PF	Z		
C915			CE04KW1C470M	ELECTRO	47UF	16WV		
C917			CK41DB1H101K	CYLND CHIP C	100PF	K		
C918			CK41DB1H331K	CYLND CHIP C	330PF	K		
C919			CC41DSL1H180J	CYLND CHIP C	18PF	J		
C920			CC41DSL1H150J	CYLND CHIP C	15PF	J		
C921			CK41DB1H102K	CYLND CHIP C	1000PF	K		
C922			CE04KW1H2R2M	ELECTRO	2.2UF	50WV		
C923			CE04KW1C470M	ELECTRO	47UF	16WV		
C924			CC41DSL1H100J	CYLND CHIP C	10PF	J	ET	
C925			CK45FB1H473Z	CERAMIC	0.047UF	Z		
C926			CK45FB1H222Z	CERAMIC	2200PF	Z		
C927			CC41DSL1H270J	CYLND CHIP C	27PF	J		
C928			CQ93M1H471J	MYLAR	470PF	J		
C929			CC41DSL1H180J	CYLND CHIP C	18PF	J		
C930			CQ93M1H681J	MYLAR	680PF	J	ET	

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C931			CC41DSL1H180J	CYLND CHIP C 18PF J	ET	
C932			CK45FB1H222Z	CERAMIC 2200PF Z	ET	
C933			CQ93M1H221J	MYLAR 220PF J	ET	
C934			CC41DSL1H270J	CYLND CHIP C 27PF J	ET	
C935			CK45FB1H222Z	CERAMIC 2200PF Z		
C936			CC41DSL1H330J	CYLND CHIP C 33PF J		
C937			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C938			CE04KW1C100M	ELECTRO 10UF 16WV		
C939-943			CK45FB1H222Z	CERAMIC 2200PF Z		
C944			CE04KW1H2R2M	ELECTRO 2.2UF 50WV		
C945			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C946			CK45FB1H103M	CERAMIC 0.010UF M		
C947			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C948			CK45FB1H103M	CERAMIC 0.010UF M		
C949			CK41DB1H101K	CYLND CHIP C 100PF K		
C950			CK45FB1H222Z	CERAMIC 2200PF Z		
C951			CE04KW1C101M	ELECTRO 100UF 16WV		
C952			CK45FB1H222Z	CERAMIC 2200PF Z		
C953			CE04KW1C100M	ELECTRO 10UF 16WV		
C954			CK45FB1H222Z	CERAMIC 2200PF Z		
C955			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C956			CK45FB1H222Z	CERAMIC 2200PF Z		
C957			CK41DB1H151K	CYLND CHIP C 150PF K		
C959			CK45FB1H222Z	CERAMIC 2200PF Z		
C960			CC41DSL1H330J	CYLND CHIP C 33PF J		
C961,962			CK45FB1H222Z	CERAMIC 2200PF Z		
C963			CK41DB1H102K	CYLND CHIP C 1000PF K		
C964			CE04KW1H0R1M	ELECTRO 0.1UF 50WV		
C965			CE04KW1C100M	ELECTRO 10UF 16WV		
C966,967			CK45FB1H822K	CERAMIC 8200PF K	MX	
C968			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C969			CE04KW1HR22M	ELECTRO 0.22UF 50WV		
C970			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C971			CE04KW1C100M	ELECTRO 10UF 16WV		
C972			CK45FB1H473Z	CERAMIC 0.047UF Z		
C973			CK41DB1H102K	CYLND CHIP C 1000PF K		
C974			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C975			CK45FB1H222Z	CERAMIC 2200PF Z		
C976			CE04KW1C101M	ELECTRO 100UF 16WV		
C977			CE04KW1C100M	ELECTRO 10UF 16WV		
C979,980			CK45FB1H122J	CERAMIC 1200PF J	K	
C979,980			CK45FF1H681K	CERAMIC 680PF K	MXET	
C981,982			CE04KW1H010M	ELECTRO 1.0UF 50WV		
C983,984			CK45FB1H332J	CERAMIC 3300PF J		
C985			CK45FB1H222Z	CERAMIC 2200PF Z		
C986			CE04KW1C100M	ELECTRO 10UF 16WV		
C989			CK45FB1H222Z	CERAMIC 2200PF Z	ET	
C990			CK41DB1H102K	CYLND CHIP C 1000PF K	ET	
C991			CK41DB1H102K	CYLND CHIP C 1000PF K	MXET	
C992			CC45SL1H330J	CERAMIC 33PF J	MX	
TC901		*	SH1106450005	CERAMIC TRIMMER		
TC902		*	SH1306450027	CERAMIC TRIMMER	ET	
TM201	2H	*	SH1165320073	SPEAKER TERMINAL		

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⚠ F201-203	1G,1H		SH1125150087	FUSE	K	
⚠ F201,202	1G,1H		SH1305150046	FUSE	MXET	
⚠ F203	2H		SH1165150023	FUSE	MX	
⚠ F203	2H		SH1305150057	FUSE	ET	
⚠ F204	2H		SH1165150023	FUSE		
⚠ F206,207	2H		SH1165150023	FUSE		
⚠ F208,209			SH1165150016	FUSE	KMX	
⚠ F210			SH1165150016	FUSE	K	
⚠ -			SH1105160009	FUSE HOLDER		
J201	2G	*	SH1305170468	HEADPHONE JACK		
SO201	2H	*	SH1105270109	PHONO JACK (SURROUND)		
SO202	2H	*	SH1105270108	PHONO JACK (SUPER WOOFER)		
SO401	1H	*	SH1105270076	PHONO JACK (AUX)		
SO901	2K		SH1205320027	ANTENNA TERMINAL	ET	
SO901	2K		SH1125320066	ANTENNA TERMINAL	KMX	
CF901,902		*	SH1106210043	CERAMIC FILTER		
L1		*	SH1256070016	OSCILLATING COIL(4.32MHz)		
L201		*	SH1305850009	FERRI-INDUCTOR 100uH		
⚠ L202		*	SH1106140093	LINE FILTER		
L401-404		*	SH1305850009	FERRI-INDUCTOR 100uH		
L501,502		*	SH1306140201	FERRI-INDUCTOR 6.8mH		
L503		*	SH1106070082	OSCILLATING COIL (105kHz)		
L505,506		*	SH1106140060	FERRI-INDUCTOR		
L507,508		*	SH1105850038	FERRI-INDUCTOR 6.8mH		
L509		*	SH1305850009	FERRI-INDUCTOR 100uH		
L801,802		*	SH1305850009	FERRI-INDUCTOR 100uH		
L903		*	SH1105850008	PEAKING COIL		
L904		*	SH1165850001	PEAKING COIL		
L905		*	SH1106060094	AM-RF		
L906		*	SH1106060093	LW-RF	ET	
L907		*	SH1106070081	AM-OSC		
L908		*	SH1106070080	LW-OSC	ET	
L909		*	SH1106080018	DETECTION COIL		
L911,912		*	SH1256140011	LOW PASS FILTER		
L913		*	SH1105850008	PEAKING COIL		
L915		*	SH1305850009	FERRI-INDUCTOR 100uH		
⚠ T201	2H	*	SH1106540241	POWER TRANSFORMER	E	
⚠ T201	2H	*	SH1106540242	POWER TRANSFORMER	T	
⚠ T201	2H	*	SH1106540245	POWER TRANSFORMER	MX	
⚠ T201	2H	*	SH1106540246	POWER TRANSFORMER	K	
T901		*	SH1126210019	CERAMIC FILTER		
X1		*	SH1106160004	CRYSTAL OSCILLATOR		
X2		*	SH1105790012	CRYSTAL OSCILLATOR 2MHZ		
XL201		*	SH1105790013	CRYSTAL OSCILLATOR		
XL701		*	SH1125790001	CRYSTAL OSCILLATOR 4MHz		
XL801		*	SH1116160002	CRYSTAL OSCILLATOR		
XL901		*	SH1106160005	CRYSTAL OSCILLATOR 7.2MHZ		
⚠ FR261,262		*	SH1105810605	FUSE RESIST 6.8 J 1/4W		
⚠ FR308		*	SH1125810214	FUSE RESIST 100 J 1/4W	K	
⚠ FR315		*	SH1125810214	FUSE RESIST 100 J 1/4W	K	
⚠ FR350A,35	1A		SH1255810085	FUSE RESIST 1.0 J 1/4W	K	
R200A			RD14BB2H475J	RD 4.7M J 1/2W	K	
⚠ R261,262		*	SH1305810835	FUSE RESIST 4.7 J 1/4W	MX	
⚠ R269,270		*	SH1105810475	FUSE RESIST 1.0 J 1/2W		

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A-311/X-311

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⚠ R283		*	SH1255810085	FUSE RESIST 1.0 J 1/4W		
⚠ R307			SH1105810593	FUSE RESIST 470 J 1/4W		
⚠ R308		*	SH1125810214	FUSE RESIST 100 J 1/4W	MXET	
R313			RD14BB2H102J	RD 1.0K J 1/2W	MXET	
⚠ R315		*	SH1125810214	FUSE RESIST 100 J 1/4W	MXET	
R317,318			RD14BB2H4R7J	RD 4.7 J 1/2W		
R321,322			RD14BB2H221J	RD 220 J 1/2W		
⚠ R444		*	SH1105810568	FUSE RESIST 2.2 J 1/4W		
⚠ R479		*	SH1301580408	FUSE RESIST 22 J 1/6W		
⚠ R484		*	SH1105810568	FUSE RESIST 2.2 J 1/4W		
⚠ R633,634		*	SH1105810600	FUSE RESIST 5.6 J 1/4W		
⚠ R637			SH1305810835	FUSE RESIST 4.7 J 1/4W		
⚠ R818		*	SH1305810426	FUSE RESIST 33 J 1/4W		
⚠ R819		*	SH1105810609	FUSE RESIST 8.2 J 1/4W		
⚠ R835		*	SH1305810426	FUSE RESIST 33 J 1/4W		
VR1		*	SH1206700185	TRIMMING POT 10K FOCUSE GAIN		
VR2		*	SH1306700640	TRIMMING POT 47K TRACKING OFF		
VR3 ,4		*	SH1256700081	TRIMMIMG POT 100K F-OFF/T-BAL		
VR5		*	SH1206700185	TRIMMIMG POT 10K TRACKING GAIN		
VR401	1F	*	SH1106700283	POTENTIOMETER (BASS)		
VR402	1F	*	SH1106700282	POTENTIOMETER (BALANCE)		
VR403	2G	*	SH1106700284	POTENTIOMETER (VOLUME)MOTOR		
VR501,502		*	SH1306700640	TRIMMING POT (PLAYBACK)		
VR505,506		*	SH1306700640	TRIMMING POT (BIAS)		
VR509,510		*	SH1306700640	TRIMMING POT (REC LEVEL)		
VR701		*	SH1206700185	TRIMMING POT 10K NOR SPEED A		
VR702		*	SH1306700651	TRIMMING POT 10K HIGH SPEED A		
VR703		*	SH1206700185	TRIMMING POT 10K NOR SPEED B		
VR704		*	SH1306700651	TRIMMING POT 10K HIGH SPEED B		
VR901		*	SH1306700640	TRIMMING POT 47K FM STOP LEVEL		
RLY201,20	2	*	SH1106370012	RELAY		
⚠ SW201		*	SH1105300472	SLIDE SWITCH (VOLTAGE SELECT)	MX	
SW401-420	1F	*	SH1305301178	TACT SWITCH		
SW451-459	2G	*	SH1105300458	TACT SWITCH		
SW701-707	2J	*	SH1305301178	TACT SWITCH		
SW708,709	2J	*	SH1105300320	SLIDE SWITCH		
SW710-719	2J	*	SH1305301178	TACT SWITCH		
SW801-806	1I	*	SH1305301178	SWITCH		
SW808-812	1I	*	SH1305301178	SWITCH		
SW813	1I	*	SH1305301178	SWITCH	ET	
SW814-817	1I	*	SH1305301178	SWITCH		
SW901	1K	*	SH1305300614	SWITCH(RESET)		
SW902	1K	*	SH1105300403	SWITCH	MX	
D1			1SS181	DIODE		
D2 -9			1SS184	DIODE		
D10		*	SVC203	DIODE		
D11			1SS184	DIODE		
D12			1SS181	DIODE		
D13			1SS184	DIODE		
D14			1SS133	DIODE		
D201			1SS133	DIODE		
D203			S4VB20	DIODE		
D204-210		*	11ES1	DIODE		
D211			1SS133	DIODE		

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D212		*	11ES1	DIODE		
D213-220			1SS133	DIODE		
D221		*	11ES1	DIODE		
D222-224			1SS133	DIODE		
D351			1SS133	DIODE		
D352		*	11ES1	DIODE		
D354			S2VB40	DIODE		
D358-361		*	11ES1	DIODE		
D401,402			1SS133	DIODE		
D501			1SS133	DIODE		
D503			1SS133	DIODE		
D505-508			1SS133	DIODE		
D701-713			1SS133	DIODE		
D715-722			1SS133	DIODE		
D723		*	11ES1	DIODE		
D724			1SS133	DIODE		
D733,734			1SS133	DIODE		
D735		*	11ES1	DIODE		
D736,737			1SS133	DIODE		
D739,740			1SS133	DIODE		
D742-746			1SS133	DIODE		
D801-814			1SS133	DIODE		
D815			1SS133	DIODE	ET	
D816			1SS133	DIODE	MX	
D818			1SS133	DIODE	MX	
D819			1SS133	DIODE		
D901,902			1SS133	DIODE		
D906,907			1SS133	DIODE		
IC1		*	LR37632	IC		
IC2			LA9200M	IC		
IC3			LC7881M	IC		
IC4		*	UM6116M2	IC		
IC5 -7			NJM4560M	IC(OP AMP X2)		
IC8 ,9		*	LA6515	IC		
IC10		*	M54641L	IC		
IC11			NJM79L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC12		*	L78N05	IC		
IC13			NJM78L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC14			NJM79L05A	IC(VOLTAGE REGULATOR/ +5V)		
IC15			NJM4560M	IC(OP AMP X2)		
IC16		*	MC14066B	IC		
IC17		*	IX1829AF	IC		
IC18			M51951ASL	IC(SYSTEM RESET)		
IC201,202		*	M5289P	IC		
IC203			LC7522	IC(7CH GRAPHIC EQUALIZER)		
IC206		*	IX1830AF	IC		
IC208			M5230L	IC(VOLTAGE REGULATOR)		
IC209		*	STK4122M	IC		
IC401			IX1252AF	IC		
IC402			M5218AL	IC(OP AMP X2)		
IC403			LC7560A	IC		
IC404		*	XR1091	IC		
IC405			M5218P	IC(OP AMP X2))		
IC406		*	LGP1U521X-1	IC		
IC407			LB1641	IC(MOTOR DRIVER)		

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IC501			BA3416BL	IC		
IC502			LA2000	IC(AUDIO LEVEL SENSOR)		
IC503		*	HA12136A	IC(DOLBY B NR)		
IC504		*	IX1215AF	IC		
IC505		*	M5218AL	IC(OP AMP X2)		
IC506,507		*	IX1281AF	IC		
IC508			M51544AL	IC(REC AMP)		
IC509,510		*	IX1281AF	IC		
IC511		*	M5218AL	IC(OP AMP X2)		
IC701		*	IX1832AF	IC		
IC702		*	IX1748AF	IC		
IC801		*	IX1472AF	IC		
IC802		*	IX1646AF	IC		
IC803		*	M51951ASL1	IC		
IC901		*	LM7000	IC(PLL FREQUENCY SYNTHESIZER)		
IC902			LA1265	IC(FM/AM TUNER)		
IC903			LA3401	IC(FM MPX)		
LCD401	2F	*	SH1105640054	LCD (GE)		
LCD402	2F	*	SH1105640053	LCD (CD)		
LCD801	1I	*	SH1105640058	LCD (TIMER)		
Q1 ,2			DTC114YK	TRANSISTOR		
Q3 ,4		*	DTC363TK	TRANSISTOR		
Q5			DTA114EK	TRANSISTOR		
Q6 ,7			DTC114YK	TRANSISTOR		
Q9 ,10			DTC114YK	TRANSISTOR		
Q11		*	2SA1182Y	TRANSISTOR		
Q13			DTC114YK	TRANSISROR		
Q201		*	2SC2785EF	TRANSISTOR		
Q202			DTC114YS	TRANSISTOR		
Q203-206			DTA114YS	TRANSISTOR		
Q207		*	2SD1858R3	TRANSISTOR		
Q208		*	2SB1237R3	TRANSISTOR		
Q209		*	2SD2061F	TRANSISTOR		
Q210		*	2SB1185E	TRANSISTOR		
Q211-213			DTC114YS	TRANSISTOR		
Q214		*	2SD1858R3	TRANSISTOR		
Q215			DTA114YS	TRANSISTOR		
Q216		*	2SD2061F	TRANSISTOR		
Q217		*	2SC2603-G	TRANSISTOR		
Q218			DTC144ES	TRANSISTOR		
Q219			DTC114YS	TRANSISTOR		
Q221			2SC2878B	TRANSISTOR		
Q225,226			2SC2878B	TRANSISTOR		
Q227			DTC114YS	TRANSISTOR		
Q228		*	2SD1858R3	TRANSISTOR		
Q229		*	2SC2785EF	TRANSISTOR		
Q230,231			DTA114YS	TRANSISTOR		
Q232,233		*	2SA933SR	TRANSISTOR		
Q234			DTA114YS	TRANSISTOR		
Q351		*	2SD1858R3	TRANSISTOR		
Q352		*	2SD2061E	TRANSISTOR		
Q353		*	2SC2785EF	TRANSISTOR		
Q354			DTC144ES	TRANSISTOR		
Q355		*	2SD2061E	TRANSISTOR		
Q356		*	2SD1858R3	TRANSISTOR		

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Q357			DTC114YS	TRANSISTOR		
Q358		*	2SD2061E	TRANSISTOR		
Q359		*	2SC2785EF	TRANSISTOR		
Q361		*	2SC2785EF	TRANSISTOR		
Q401,402			2SC2785EF	TRANSISTOR		
Q501,502			DTC114YS	TRANSISTOR		
Q505,506			DTC114YS	TRANSISTOR		
Q511,512		*	2SC2785EF	TRANSISTOR		
Q513			DTC114YS	TRANSISTOR		
Q517			DTC114YS	TRANSISTOR		
Q518			DTA114YS	TRANSISTOR		
Q519,520		*	2SC2785EF	TRANSISTOR		
Q521-524		*	2SC2240BL	TRANSISTOR		
Q525		*	2SC2785EF	TRANSISTOR		
Q526			DTA114YS	TRANSISTOR		
Q527			DTC114YS	TRANSISTOR		
Q529-531			2SC2001-L	TRANSISTOR		
Q532		*	2SC2785EF	TRANSISTOR		
Q533			DTC114YS	TRANSISTOR		
Q534		*	2SA933SR	TRANSISTOR		
Q535			DTC114YS	TRANSISTOR		
Q536			DTC144ES	TRANSISTOR		
Q537-546			DTC114YS	TRANSISTOR		
Q547,548		*	2SC2785EF	TRANSISTOR		
Q549,550			DTC144ES	TRANSISTOR		
Q701,702		*	2SA562-Y	TRANSISTOR		
Q703		*	2SD1858R3	TRANSISTOR		
Q704		*	2SB1237R3	TRANSISTOR		
Q705		*	2SC1959Y	TRANSISTOR		
Q706		*	2SA562-Y	TRANSISTOR		
Q707		*	2SC1959Y	TRANSISTOR		
Q708,709		*	2SA933SR	TRANSISTOR		
Q710		*	2SD2061E	TRANSISTOR	K	
Q710		*	2SD2061F	TRANSISTOR	MXET	
Q711,712		*	2SA562-Y	TRANSISTOR		
Q713		*	2SD1858R3	TRANSISTOR		
Q714		*	2SB1237R3	TRANSISTOR		
Q715		*	2SC1959Y	TRANSISTOR		
Q716		*	2SA562-Y	TRANSISTOR		
Q717		*	2SC1959Y	TRANSISTOR		
Q718-723			DTC114YS	TRANSISTOR		
Q725-727			DTC114YS	TRANSISTOR		
Q728			DTC144ES	TRANSISTOR		
Q729-733			DTC114YS	TRANSISTOR		
Q734			DTA114YS	TRANSISTOR		
Q735,736			DTC114YS	TRANSISTOR		
Q804		*	2SC2785EF	TRANSISTOR		
Q805		*	2SD1858R3	TRANSISTOR		
Q806			DTC144ES	TRANSISTOR		
Q807			DTA114YS	TRANSISTOR		
Q902		*	2SC3800	TRANSISTOR		
Q903			DTC114YS	TRANSISTOR		
Q905		*	2SC1740LSR	TRANSISTOR	K	
Q905			2SC1740S	TRANSISTOR	MXTE	
Q906		*	2SC2785EF	TRANSISTOR		

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Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
Q907-909		⁎	2SC2785EF	TRANSISTOR	ET	
Q910,911		⁎	2SC3800	TRANSISTOR		
Q912		⁎	DTA144WS	TRANSISTOR		
Q913			DTA114ES	TRANSISTOR		
Q914			DTA114ES	TRANSISTOR	ET	
Q915			DTC114YS	TRANSISTOR	ET	
Q916,917			DTC114YS	TRANSISTOR		
Q918,919			DTC114YS	TRANSISTOR	MX	
VD901,902		⁎	KV1236Z	VARICAP		
ZD1		⁎	MTZJ3R9A	ZENER DIODE		
ZD201		⁎	HZS12AL3	ZENER DIODE		
ZD202		⁎	HZS12CL1	ZENER DIODE		
ZD203,204		⁎	HZS7BL2	ZENER DIODE		
ZD205		⁎	RD5R6JS2	ZENER DIODE		
ZD206		⁎	RD130JS2	ZENER DIODE		
ZD351		⁎	RD6R2JS2	ZENER DIODE		
ZD352,353		⁎	HZS12AL3	ZENER DIODE		
ZD354		⁎	RD5R6JS2	ZENER DIODE		
ZD355		⁎	HZS12BL3	ZENER DIODE		
ZD357			HZ6B2L	ZENER DIODE		
ZD358			HZ9B2L	ZENER DIODE		
ZD359			HZ6B2L	ZENER DIODE		
ZD401		⁎	HZS6AL1	ZENER DIODE		
ZD402		⁎	HZ4B-1	ZENER DIODE		
ZD501		⁎	RD100JS2	ZENER DIODE		
ZD502		⁎	HZS7BL2	ZENER DIODE		
FE901		⁎	SH1125500004	FRONT END		
MECHANISM PARTS						
2	1B	⁎	SH1313730001	MAGNET		
3	1B	⁎	SH1253230083	DISC STOPPER		
5	1B	⁎	SH1102710085	BELT		
6	1B	⁎	SH1102840110	PULLEY DISK		
7	1B	⁎	SH1302810081	PINION GEAR		
9	1A	⁎	SH1102480517	SHIFT LEVER		
10	2B	⁎	SH1102070168	LOAD CHASSIS		
11	2B	⁎	SH1302810228	INTERMEDIATE GEAR		
12	2B	⁎	SH1302810229	DRIVE GERA		
13	3B	⁎	SH1252930015	TURNTABLE ASSY		
15	3B	⁎	SH1303260448	INSULATING RUBBER		
16	3B	⁎	SH1305301248	LEAD IN SWITCH		
19	3A	⁎	SH1302810232	LACK		
20	3A	⁎	SH1252580244	LACK SPRING		
21	3A	⁎	SH1302810231	FIXING LACK		
22	2B,3B	⁎	SH1302900394	GUIDE SHAFT		
23	2A	⁎	SH1101100378	TRAY		
24	2B	⁎	SH1155300088	LEAF SW		
DM	3B	⁎	SH1306300392	DISC MOTOR		
FM	3B	⁎	SH1306300393	FEED MOTOR ASSY		
LM	2B	⁎	SH1106300144	LOAD MOTOR		
PU	3A	⁎	SH1106170095	PICKUP WITHOUT AMP		
301	1E		D01-0118-08	FLYWHEEL ASSY		
302	1E		D01-0119-08	FLYWHEEL ASSY		

E: Scandinavia & Europe K: USA P: Canada W:Europe
Y : PX(Far East, Hawaii) T: England M: Other Areas
Y : AAFES(Europe) X: Australia

⚠ indicates safety critical components.

⁎ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Desti-nation 仕向	Re-marks 備考
303	2D		D03-0231-08	REEL DISK ASSY		
304	2C		D03-0232-08	REEL DISK ASSY		
305	1E		D10-2334-08	SLIDER ASSY		
306	1C,1D		D10-2335-08	LEVER(CrO2,F.REC/R.REC)		B
306	1C,1D		D10-2335-08	LEVER(CrO2)		A
307	1C,1D	⁎	D10-0336-08	LEVER(HALF)		
308	1E		D10-2338-08	PLAY ARM		
309	2C		D10-2339-08	SLIDER		
310	1D		D10-2340-08	ROD (SOLENOID)		
311	2D		D10-2341-08	ROD		
313	2C		D10-2057-08	EJECT PREVENT ARM		B
313	2D		D10-2226-08	EJECT PREVENT ARM		A
314	1E		D13-0812-08	GEAR ASSY		
315	2D		D14-0304-08	IDLER ASSY		
318	2C		D40-0928-08	HEAD BASE		
BM	1E		D16-0287-08	BELT		
PF	2D		D14-0311-08	PINCH ROLLER ASSY		
PR	2C		D14-0312-08	PINCH ROLLER ASSY		
321	2D		J25-6284-08	LEAD WIRE (PLAY)		A
321	2E		J25-6285-08	LEAD WIRE (REC/PLAY/ERASE)		B
325	2C		G01-2398-08	EXTENSION SPRING		
326	2E		G01-2400-08	TORSION COIL SPRING		
327	1C		G01-2422-08	EJECT PREVENT SPRING		A
327	2D		G01-2439-08	EJECT PREVENT SPRING		B
328	1D		G02-0947-08	FLAT SPRING		
332	2D		J19-3253-08	LEAD HOLDER		
333	2C		J25-6284-08	HEAD WIRE (PLAY)		A
333	2C		J25-6285-08	HEAD WIRE (PLAY/REC/ERASE)		B
335	2C,2D		N09-1864-08	STEPPED SCREW		
336	2C		N09-2585-08	MACHINE SCREW (M2X5)		
337	2D		N09-2700-08	MACHINE SCREW (M2.6X5)		
338	2D		N09-2701-08	MACHINE SCREW (M3X8)		
339	1D,2C		N09-2710-08	MACHINE SCREW (M1.6X6)		
342	2C		N19-0904-08	FLAT WASHER (1.7X0.25)		
343	1E		N19-0905-08	FLAT WASHER (2.6X0.25)		
344	2C,2D		N19-1095-08	FLAT WASHER (2.1X0.25)		
345	2D		N19-1214-08	FLAT WASHER (2.6X0.5)		
346	2D		N29-0205-04	E RING		
S1 ,2	1D		S90-0105-08	PUSH SWITCH		
S5 ,6	1D,1E		S90-0105-08	PUSH SWITCH		
350	1D		T94-0216-08	SOLENOID COIL		
352	1D		T95-0120-08	OPTO REFLECTOR		
MM	1E		T42-0535-08	DC MOTOR ASSY (MAIN)		
PH	2C		T31-0056-08	PLAYBACK HEAD		A
RM	1D		T42-0534-08	DC MOTOR ASSY (REEL)		
RPEH	2C		T39-0010-08	RECORD/PLAYBACK/ERASE HEAD		B
PH1	1D		GP2S04B	PHOTO SENSOR		
PH1	1D		SPI-335-358	PHOTO SENSOR		

E: Scandinavia & Europe K: USA P: Canada W:Europe
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A : A DECK
B : B DECK

⚠ indicates safety critical components.

A-311/X-311

SPECIFICATIONS

A-311 (CD player/amplifier unit)

[Amplifier section]

Rated power output

> 20 watts per channel minimum RMS, both channels drive, at 6 Ω from 60 Hz to 15,000 Hz with no more than 0.9% total harmonic distortion (FTC).

(IEC/NF) From 63 to 12,500 Hz, 0.7% T.H.D.
at 6 Ω .... 20 W + 20 W
at 8 Ω .... 18 W + 18 W
(DIN) 1 kHz, at 6 Ω .... 20 W + 20 W
1 kHz, at 8 Ω .... 18 W + 18 W
(EIAJ) Maximum useful power output
at 6 Ω .... 30 W + 30 W
Input sensitivity/impedance
AUX .... 200 mV/50 kΩ
Output level/impedance
Super Woofer Pre-Out .... 1.3 V/600 Ω
Graphic equalizer .... 60 Hz, 150 Hz, 400 Hz, 1 kHz, 2.4 kHz, 6 kHz, 15 kHz

[CD player section]

Readout .... Non-contact optical readout (semiconductor laser)
Frequency response ...... 30 Hz ~ 20 kHz +1dB - 2dB

[GENERAL]

Power consumption .... 120 W (IEC)
96 W (for U.S.A. and Canada)
Dimensions .... W: 270 mm (10-5/8")
H : 165 mm (6-1/2")
D : 310 mm (12-3/16")
Weight (Net) .... 5.5 kg (12.12 lb)

X-311/L (Tuner/cassette deck unit)

[X-311 FM tuner section]

Tuning frequency range .... 87.5 MHz ~ 108 MHz
Usable sensitivity (MONO at 75 Ω) .... 2.2 μV

[X-311 AM tuner section]

Tuning frequency range
9 kHz step .... 531 kHz ~ 1,602 kHz
10 kHz step .... 530 kHz ~ 1,620 kHz
Usable sensitivity .... 500 μV/m (loop antenna)

[X-311L FM tuner section]

Tuning frequency range .... 87.5 MHz ~ 108 MHz
Usable sensitivity (MONO at 75 Ω) .... 1.8 μV

[X-311L MW tuner section]

Tuning frequency range .... 522 kHz ~ 1,620 kHz
Usable sensitivity .... 500 μV/m (loop antenna)

[X-311L LW tuner section]

Tuning frequency range .... 153 kHz ~ 281 kHz
Usable sensitivity .... 500 μV/m (loop antenna)

[Cassette deck section]

Recording system .... AC bias (Frequency: 105 kHz)
Wow & flutter .... 0.8% (WRMS)

[GENERAL]

Dimensions .... W: 270 mm (10-5/8")
H : 165 mm (6-1/2")
D : 274 mm (10-13/16")
Weight (Net) .... 3.3 kg (7.27 lb)

Note:
KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

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A-311/X-311